Pioneer *sound.vision.soul*

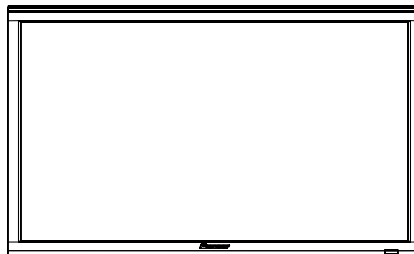## Service Manual

PDP-425MX

PLASMA DISPLAY

PDP-425MX
PDP-42FXE10

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
PDP-425MX	KUCXZC	AC 100 - 120 V	
PDP-42FXE10	TLXZC5	AC 100 - 240 V	

For details, refer to "Important Check Points for good servicing".

SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

**Health & Safety Code Section 25249.6 - Proposition 65**

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols ▬▭▭ (fast operating fuse) and/or ▬▭▭ (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible ▬▭▭ (fusible de type rapide) et/ou ▬▭▭ (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

SAFETY PRECAUTIONS

NOTICE : Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis.
The following precautions should be observed :

1. When service is required, even though the PDP UNIT an isolation transformer should be inserted between the power line and the set in safety before any service is performed.

2. When replacing a chassis in the set, all the protective devices must be put back in place, such as barriers, nonmetallic knobs, adjustment and compartment covershields, isolation resistor-capacitor, etc.

3. When service is required, observe the original lead dress. Extra precaution should be taken to assure correct lead dress in the high voltage circuitry area.

4. Always use the manufacture's replacement components. Especially critical components as indicated on the circuit diagram should not be replaced by other manufacture's. Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.

5. Before returning a serviced set to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the set by the manufacture has become defective, or inadvertently defeated during servicing. Therefore, the following checks should be performed for the continued protection of the customer and servicetechnician.

6. Perform the following precautions against unwanted radiation and rise in internal temperature.
• Always return the internal wiring to the original styling.
• Attach parts (Gascket, Ferrite Core, Ground, Rear Cover, Shield Case etc.) surely after disassembly.

7. Perform the following precautions for the PDP panel.
• When the front case is removed, make sure nothing hits the panel face, panel corner, and panel edge (so that the glass does not break).
• Make sure that the panel vent does not break. (Check that the cover is attached.)
• Handle the FPC connected to the panel carefully. Twisting or pulling the FPC when connecting it to the connector will cause it to peel off from the panel.

8. Pay attention to the following.
• Pay extreme caution when the front case and rear panel are removed because this may cause a high risk of disturbance to TVs and radios in the surrounding.

PDP-425MX

Leakage Current Cold Check

With the AC plug removed from an AC power source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester (DC 500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (input/output terminals, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of $0.3M\Omega$ and a maximum resistor reading of $5M\Omega$. Any resistor value below or above this range indicates an abnormality which requires corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into an AC power source (do not use an isolation transformer for this check).

Turn the AC power switch on.

Using a "Leakage Current Tester (Simpson Model 229 equivalent)", measure for current from all exposed metal parts of the cabinet (input/output terminals, screwheads, metal overlays, control shaft, etc.), particularly any exposed metal part having a return path to the chassis, to a known earth ground (water pipe, conduit, etc.). Any current measured must not exceed 0.5mA.
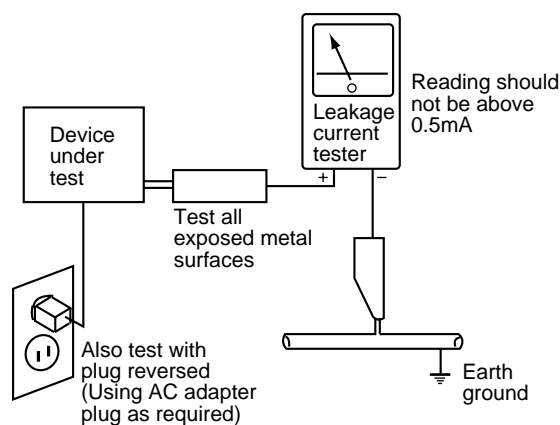
AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE SET TO THE CUSTOMER.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in PIONEER set have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

A

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

B

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

C

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

D

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

E

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

F

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

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PDP-425MX

1. SPECIFICATIONS

[PDP-425MX/ KUCXZC]

Screen Size	918 (H) x 518 (V) mm 36.1 (H) x 20.4 (V) inch Diagonal 42 inch
Aspect Ratio	16:09
Resolution	1024 (H) x 768 (V) pixels
Input Signals	RGB, NTSC (3.58/4.43), PAL (B,G,M,N), PAL60, SECAM

Input Terminals	INPUT1 : Mini D-sub 15-pin x 1, Audio.. stereomin jack x 1
	INPUT2 : Mini D-sub 15-pin x 1, Audio.. stereomin jack x 1
	INPUT3 : DVI 24-pin x 1, Audio.. stereomin jack x 1
	INPUT4 : Composite.. RCA-pin x 1
	            : S-video.. S-video DIN 4-pin x 1
	            : Audio.. Stereo RCA x 2
	INPUT5 : Component.. RCA-pin (Y, Pb/Cb, Pr/Cr) x 1
	            : Audio.. Stereo RCA x 2
	RS-232C : D-sub 9-pin x 1

Sound Output	8W+8W at 6 ohm
Power Supply	AC120V 60Hz
Current Rating	2.8A
Standby Power Consumption	1.7W
Dimensions	1080 (W) x 614 (H) x 89 (D) mm
Weight	29.5 kg
Environmental Considerations Operating Temperature	0 ℃ to 40 ℃ / 32° F to 104° F
EMI	Class B
FAN	Two Fan motors running always with power on
Integrator menu	yes
Orbiter	yes
Side mask	5 steps

Please refer to each instruction manual.
The features and specifications may be subject to change without notice.

PDP-425MX

2. EXPLODED VIEWS AND PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part.*
  Therefore, when replacing, be sure to use parts of identical designation.
● *Screws adjacent to ▼ mark on product are used for disassembly.*
● *For the applying amount of lubricants or glue, follow the instructions in this manual.*
  (In the case of no amount instructions, apply as you think it appropriate.)

2.1 PACKING SECTION
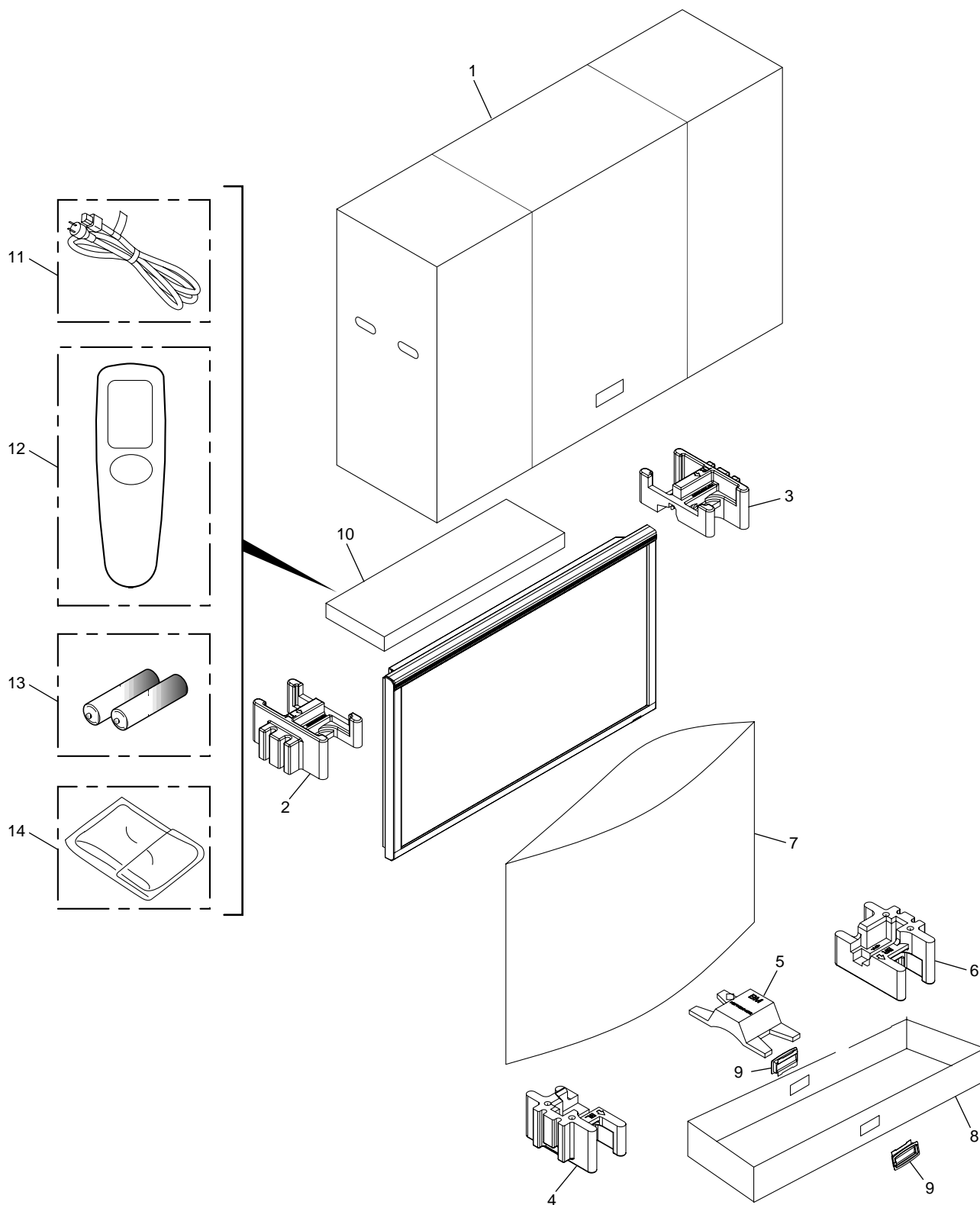
PDP-425MX

PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Carton (COVER) PH3	See Contrast table (2)
	2	EPP Form (UP-L) PH3 (HBPH3001, REV3A)	HBPH3001019
	3	EPP Form (UP-R) PH3 (HBPH3002, REV3A)	HBPH3002015
	4	EPP Form (DOWN-L) PH3 (HBPH3003, REV3A)	HBPH3003011
	5	EPP Form (DOWN-M) PH3 (HBPH3004, REV3A)	HBPH3004018
	6	EPP Form (DOWN-R) PH3 (HBPH3005, REV3A)	HBPH3005014
	7	EPE Bag VG3 (HAVG3001, REV3A)	HAVG3001018
	8	Carton (BASE) PH3 (HFPH3001, REV3A)	HFPH3001012

Mark	No.	Description	Part No.
	9	Carton CLASP VV3 (JXVV3001, REV3A)	JXVV3001013
	10	Box (Accessory) PH3 (HEPH3001, REV3B)	HEPH3001011
⚠	11	PWR Cord	See Contrast table (2)
	12	Remote Control 7096@01-0013 (DQP-C962) LF	DQ700709610
NSP	13	Battery LR03 (K)(Alkaline,1.5V) EP	AHDALR03138
	14	Clean Cloth PH3 (JXPH3002, REV3A)	JXPH3002016
	15	Cable Clip (205 x 12) PH3 (EBPH3013, REV 3B)	EBPH3013017

(2) CONTRAST TABLE

PDP-42FXE10/TLXZC5 and PDP-425MX/KUCXZC are constructed the same except for the following :

Mark	No.	Symbol and Description	PDP-425MX KUCXZC	PDP-42FXE10 TLXZC5
	1	Carton (COVER) PH3	HFPH3007011	HFPH3009013
⚠	11	PWR Cord US	DM333301016	Not used
⚠	11	PWR Cord ES	Not used	DM333301024

2.2 EXTERIOR SECTION

PDP-425MX

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PDP-425MX
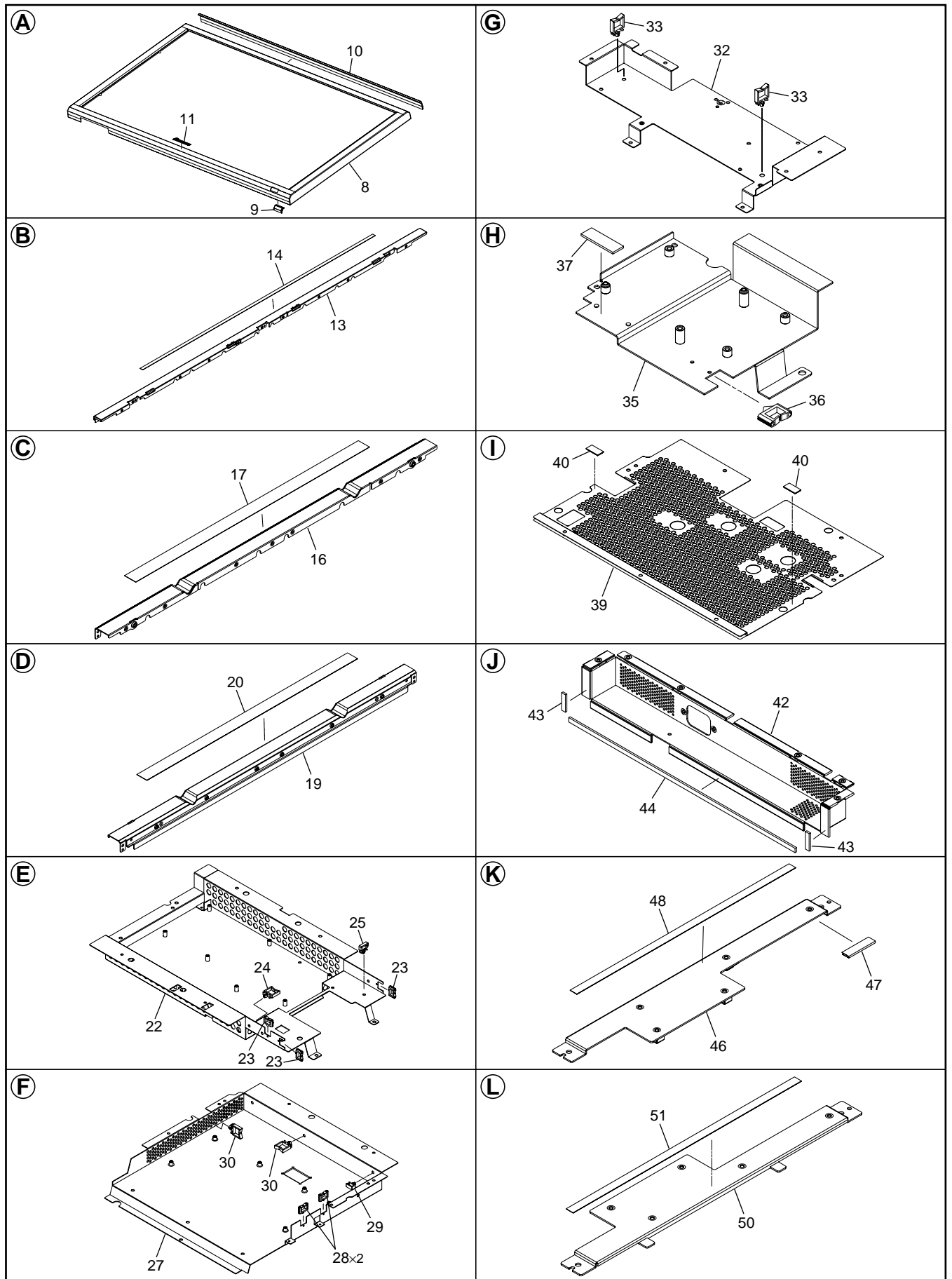
EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
A	1	PH3 M/B Assy <DVI> EU, PNX	21PH3MB0041
	2	PH3 AUDIO BOARD Assy	36PH3AB0003
	3	PH3 BUTTON/B Assy	33PH3BB0005
	4	PH3 POWER_SW/B Assy	34PH3PB0000
	5	PH3 IR/B Assy	35PH3IB0009
	6	PH3 SENSOR/B Assy	3LPH3SB0001
	7	PH3 FRONT PANEL Assy	34PH3FP0001
	8	Front Panel PH3 (EAPH3001, REV 3D)	See Contrast table (2)
B	9	Indicator PH3 (EBPH3009, REV 3A)	EBPH3009010
	10	Decorator PH3	See Contrast table (2)
	11	Logo Pioneer PH3 (FFPH3001, REV 3B)	FFPH3001012
	12	PH3 Bracket Filter Top Assy	39PH3BR0059
	13	BKT Filter Top PH3 (FAPH3004, REV 3B)	FAPH3004017
	14	Cushion (720 x 8 x T0.4) PH3 (FCPH3006, REV 3A)	FCPH3006011
	15	PH3 Bracket Filter Side L Assy	39PH3BR0008
C	16	BKT Filter Side L PH3 (FAPH3005, REV 3A)	FAPH3005013
	17	Cushion (420 x 20 x T0.4) PH3 (FCPH3003, REV 3A)	FCPH3003012
	18	PH3 Bracket Filter Side R Assy	39PH3BR0016
	19	BKT Filter Side R PH3 (FAPH3008, REV 3B)	FAPH3008012
	20	Cushion (420 x 20 x T0.4) PH3 (FCPH3003, REV 3A)	FCPH3003012
D	21	PH3 Bracket Power Assy	39PH3BR0024
	22	HITACHI PS Bracket PH3 (FAPH3026, REV3B)	FAPH3026011
	23	Cable Clip (19 x 12) PH3 (EBPH3010, REV 3A)	EBPH3010018
	24	Cable Clip (21 x 17) PH3 (EBPH3014, REV 3A)	EBPH3014013
	25	Wire Clip (CK-5) VQ1 (EBVQ1016, REV3A)	EBVQ1016016
E	26	PH3 Bracket Main Assy	39PH3BR0032
	27	BKT Main (42 x M3) PH3 (FAPH3012, REV 3B)	FAPH3012010
	28	Cable Clip (19 x 12) PH3 (EBPH3010, REV 3A)	EBPH3010018
	29	Cable Clip (14 x 8) PH3 (EBPH3011, REV 3A)	EBPH3011014
	30	Cable Clip (21 x 17) PH3 (EBPH3014,REV 3A)	EBPH3014013
F	31	PH3 Bracket Audio Assy	39PH3BR0041
	32	BKT Audio (42 x M3) PH3 (FAPH3013, REV 3D)	FAPH3013016
	33	Cable Clip (21 x 17) PH3	EBPH3014013

Mark	No.	Description	Part No.
		(EBPH3014, REV 3A)	
	34	PH3 Bracket 232C Assy	39PH3BR0067
	35	BKT 232C (42 x M3) PH3 (FAPH3014, REV 3A)	FAPH3014012
	36	Cable Clip (19 x 12) PH3 (EBPH3010, REV 3A)	EBPH3010018
	37	Gasket EMI-3 PH3 (GBPH3008, REV 3A)	GBPH3008013
	38	PH3 Shield Cover Main Assy	3APH3SA0005
	39	Shield Cover Main PH3 (FAPH3015,REV 3B)	FAPH3015019
	40	Cushion (20 x 10 x T1) PH3 (FCPH3008, REV 3A)	FCPH3008014
	41	PH3 Terminal Panel B Assy	3BPH3TA0001
	42	Terminal B PH3 (FAPH3018, REV 3C)	FAPH3018018
	43	Gasket EMI-1 PH3 (GBPH3001, REV 3B)	GBPH3001019
	44	Gasket EMI-2 PH3 (GBPH3002, REV 3B)	GBPH3002015
	45	PH3 Bracket Option L Assy	3CPH3BR0002
	46	BKT Option L PH3 (FAPH3007, REV 3B)	FAPH3007016
	47	Cushion (40 x 20 x T0.4) PH3 (FCPH3007, REV 3A)	FCPH3007018
	48	Cushion (330 x 10 x T0.5) PH3 (FCPH3010, REV 3B)	FCPH3010019
	49	PH3 Bracket Option R Assy	3CPH3BR0011
	50	BKT Option R PH3 (FAPH3010, REV 3B)	FAPH3010017
	51	Cushion (330 x 10 x T0.5) PH3 (FCPH3010, REV 3B)	FCPH3010019
	52	BKT Filter BTM PH3 (FAPH3003, REV 3D)	FAPH3003011
	53	BKT Filter A PH3 (FAPH3001, REV 3A)	FAPH3001018
	54	BKT Filter B PH3 (FAPH3002, REV 3C)	FAPH3002014
	55	BKT Filter C PH3 (FAPH3006, REV 3B)	FAPH3006010
	56	Shield Cover L PH3 (FAPH3016, REV 3B)	FAPH3016015
	57	Shield Cover R PH3 (FAPH3017, REV 3B)	FAPH3017011
	58	Terminal S Assy PH3 (FAPH3019, REV 3C)	FAPH3019014
	59	Frame Bracket L PH3 (FBPH3002, REV 3A)	FBPH3002015
	60	Frame Bracket R PH3 (FBPH3003, REV 3C)	FBPH3003011

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Mark	No.	Description	Part No.
	61	Plate 232C Assy PH3 (FBPH3001, REV 3B)	FBPH3001019
	62	BKT Stand Assy PH3 (FAPH3009, REV 3B)	FAPH3009019
	63	Back Cover (42 x M2) PH3 (FAPH3020, REV 3B)	FAPH3020012
	64	Frame (42 x M2) PH3 (EAPH3002, REV 3A)	EAPH3002014
	65	Corner Piece BL PH3 (EBPH3002, REV 3A)	EBPH3002015
	66	Corner Piece BR PH3 (EBPH3003, REV 3A)	EBPH3003011
	67	Corner Piece TL PH3 (EBPH3004, REV 3A)	EBPH3004018
	68	Corner Piece TR PH3 (EBPH3005, REV 3A)	EBPH3005014
	69	Cover (Control) PH3 (EBPH3001, REV 3C)	EBPH3001019
	70	Button Control PH3 (EBPH3006, REV 3C)	EBPH3006011
	71	Cap (Power SW) PH3 (EBPH3007, REV 3A)	EBPH3007017
	72	Cover (Power SW) PH3 (EBPH3008, REV 3A)	EBPH3008013
	73	Glass Filter (42") PH3 (JXPH3001, REV3A)	JXPH3001010
	74	Barrier PH4 (FCPH4003, REV3A)	FCPH4003016
	75	Barrier (RC) PH3 (FCPH3002, REV 3B)	FCPH3002016
	76	Barrier (PS) UL PH3 (FCPH3009, REV 3A)	FCPH3009011
	77	Cushion (970 x 8 x T5) PH3 (GBPH3003, REV 3C)	GBPH3003011
	78	Cushion (537 x 8 x T5) PH3 (GBPH3004, REV 3C)	GBPH3004018
	79	Mylar HT Iusulation PH3 (FCPH3011, REV 3B)	FCPH3011015
	80	Cable Clip (27 x 10) PH3 (EBPH3012, REV 3B)	EBPH3012011
	81	Cable Clip (14 x 8) PH3 (EBPH3011, REV 3A)	EBPH3011014
	82	Screw M3 x 4-P (BNI)	MS30040PBG5
	83	Screw M3 x 10-P (BNI)	MS30100PBB0
	84	Screw M4 x 10 P (BNI)	MS40100PBH1
	85	Screw T3 x 8-B (BNI)	ME30080BJ26
	86	Screw M3 x 30 F (BNI)	MM30300FJ24
	87	Screw T3 x 12 P (BNI)	ME30120PJ64
	88	Screw M4 x 8 B (BNI)	MM40080BK40
	89	Screw T4 x 12-B (BNI)	ME40120BJ24
	90	IO Nut PH3 (MBPH3001, REV 3A)	MBPH3001019

Mark	No.	Description	Part No.
	91	Cable Assy PH3 Audio A (11P/11P, 2A) EU	DD0PH3AB009
	92	Cable Assy PH3 Button A (8P/7P, 2A) EU	DD0PH3TH001
	93	Cable Assy PH3 Button B (7P/7P, 2A) EU	DD0PH3TH108
	94	Cable Assy PH3 Switch (9P/9P, 2A) EU	DD0PH3PI005
	95	Cable Assy PH3 LED (5P/5P, 2A) EU	DD0PH3LD007
	96	Cable Assy PH3 LVDS (40P/31P, 2A) 2R EU	DD0PH3TH205
	97	Cable Assy PH3 Audio Power (6P/7P, 2A) EU	DD0PH3AB203
	98	Cable Assy PH3 Power PV (8P/8P, 2A) EU	DD0PH3PB001
	99	Cable Assy PH3 Power PM (7P/6P, 2A) EU	DD0PH3PB108
⚠	100	Cable Assy PH3 AC Inlet (3P/3P, 3A) EU	DD0PH3TH604
	101	Cable Assy PH3 Power PD+PH (14P/14P, 2A) EU	DD0PH3PB507
	102	DC Fan 12V (90 x 90 x 40) AFB0912L-5G89 EP	DQ5DC99J813
	103	PDP 42" NP42H5MF01 (XGA) L-F	AA42H5MF001
	104	Cable Assy PH3 Power PN (12P/4P, 2A) EU	DD0PH3PB604
	105	Cable Assy PH3 Sensor A+B (6P/2P, 2A) EU	DD0PH3TH507
	106	EMI Ferrite Core K5B RC 26 x 30 x 13-MG EP.	CW0K5BRC204
⚠	107	PWR 500W, PS-250 (AC85~276V) EU	AF500B00306
	108	Gasket (150 x 35 x 0.1) PH4 (GBPH4005, REV3A)	GBPH4005018
	109	Wire Clip (CK-5) VQ1 (EBVQ1016, REV3A)	EBVQ1016016
	110	Cable Clip (57 x 8) PH3 (EBPH3015, REV 3A)	EBPH3015010
	111	Screw M3 x 7-P (BNI)	MS30070PBS7
	112	Gasket Sponge B PH4 (GBPH4006, REV3A) (HAVG3001, REV3A)	GBPH4006014
	113	Audio Label PH4 (HCPH4001, REV3A)	HCPH4001013
	114	Terminal (DVI) Label PH3 (HCPH3002, REV3A)	HCPH3002016
	115	Caution Label (AC) PH4 (HCPH4004, REV3A)	HCPH4004012

(2) CONTRAST TABLE

PDP-42FXE10/TLXZC5 and PDP-425MX/KUCXZC are constructed the same except for the following :

Mark	No.	Symbol and Description	PDP-425MX KUCXZC	PDP-42FXE10 TLXZC5
	8	Front Panel (BK) PH3	EAPH3001026	Not used
	8	Front Panel PH3	Not used	EAPH3001018
	10	Decorator (BK) PH3	EAPH3003029	Not used
	10	Decorator (BK) PH3	Not used	EAPH3003011

2.3 PDP MODULE (NP42H5MF01QA)

NP42H5MF01QA
Upper compatible if no terms.

Name of (board)	Version	Replaceable Version	Conditions	Note
High Voltage Board PKG42H5G1	03B	**03B**		
Common Connection Board PKG42H5J4	01A	**01A/02A**		
	02A			
Data Relay Board(Left Down) PKG42H5J7	01A	**01A/02A**		
	02A			
Data Relay Board(Right Down) PKG42H5J8	01A	**01A/02A**		
	02A			
Data Relay Board(Left Up) PKG42H5J5	01A	**01A/02A**		
	02A			
Data Relay Board(Right Up) PKG42H5J6	01A	**01A/02A**		
	02A			
Common Relay Board PKG42H5J3	01A	**01A/02A**		
	02A			
Scan Relay Board(Center) PKG42H5E3/50X6E3	01A	**01A/02A**		
	02A			
Scan Relay Board(Up) PKG42H5E1	01A	**01A/02A**		Scan Relay Board(up) should be combined with the same version of Scan Relay Board(Down) .
	02A			
	01A	**01C/02C**		
	02C			
Scan Relay Board(Down) PKG42H5E2	01A	**01A/02A**		Scan Relay Board(Down) should be combined with the same version of Scan Relay Board(Up).
	02A			
	01C	**01C/02C**		
	02C			
Digital Board PKG42H5C1	01C-07/02C-07	**17C-08**		
	13C-07			
	14C-07			
	12C-08			
	14C-08			
	15C-08			
	16C-08			
	17C-08			

PARTS LIST

NP42H5MF01QA

SYMBOL	PART NAME TYPE NAME	VERSION	PART NO	QTY	NOTE
1	PKG42H5G1	03B	9S899891	1	High Voltage Board
2	PKG42H5C1	17C-08	9S890002	1	Digital Board
3	PKG42H5J7	02A	9S899895	1	Data Relay Board(Left Down)
4	PKG42H5J8	02A	9S899896	1	Data Relay Board(Right Down)
5	PKG42H5J5	02A	9S899893	1	Data Relay Board(Left Up)
6	PKG42H5J6	02A	9S899894	1	Data Relay Board(Right Up)
7	PKG42H5E1	02A	9S899897	1	Scan Relay Board(Up)
	PKG42H5E1	02C	9S899862	1	
8	PKG42H5E2	02A	9S899898	1	Scan Relay Board(Down)
	PKG42H5E2	02C	9S899863	1	
9	PKG42H5E3/50X6E3	01A	9S899829	1	Scan Relay Board(Center)
	PKG42H5E3/50X6E3	02A	9S899899	1	
10	PKG42H5J4	02A	9S899919	1	Common Connection Board
11	PKG42H5J3	02A	9S899918	1	Common Relay Board
12	FFC42H5-05	-	9S500025	1	Refer to the below figure
13	FFC42H5-01	-	9S500021	1	Refer to the below figure
14	FFC61C2-08	-	9S500020	1	Refer to the below figure
15	FFC42H5-02	-	9S500022	1	Refer to the below figure
16	FFC42H5-03	-	9S500023	1	Refer to the below figure
17	FFC42H5-04	-	9S500024	1	Refer to the below figure
18	CABLE42H5-01	-	9S600016	2	Refer to the below figure
19	CABLE42H5-02	-	9S600017	2	Refer to the below figure
20	CABLE42H5-04	-	9S600018	1	Refer to the below figure
21	Polyester Tape No.3161	-	9S700001	1	

(1)FFC42H5-05   (7)CBLE42H5-01   (2) FFC42H5-01

(Note) place it on aluminum tape.(4 pcs)

(Note)Be slightly slack not to have the stress in the connector joint. (solid line part)

(8)CBLE42H5-02

(10)Polyester Tape No.3161(11pcs)

(Note) Do not slacken.(Dotted line part)

(6) FFC42H5-04   (5) FFC42H5-03   (9) CBLE42H5-04

(3) FFC61C2-08   (4) FFC42H5-02   (7)CBLE42H5-01   (8) CBLE42H5-02
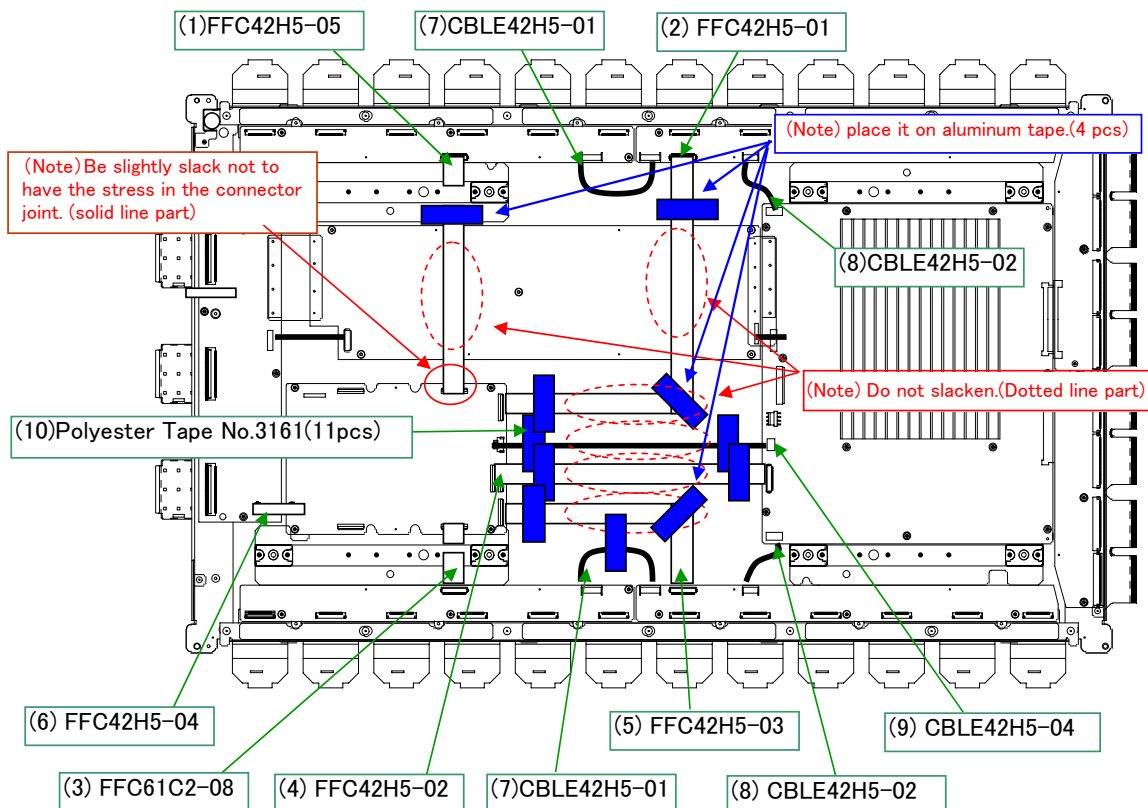
3. BLOCK DIAGRAM
3.1 OVERALL DIAGRAM

● System Block and Wiring Diagram

Power Board

Button Board

Button A (7pin)

Audio B (3pin)

PV (8pin)   PN (12pin)   PA (7pin)

LVDS cable   Button B (7pin)

Audio Board

To FAN

To sensor   Main Board

50" model only

Audio A (11pin)

Switch (9pin)   LED (5pin)

Power Switch Board   IR Board
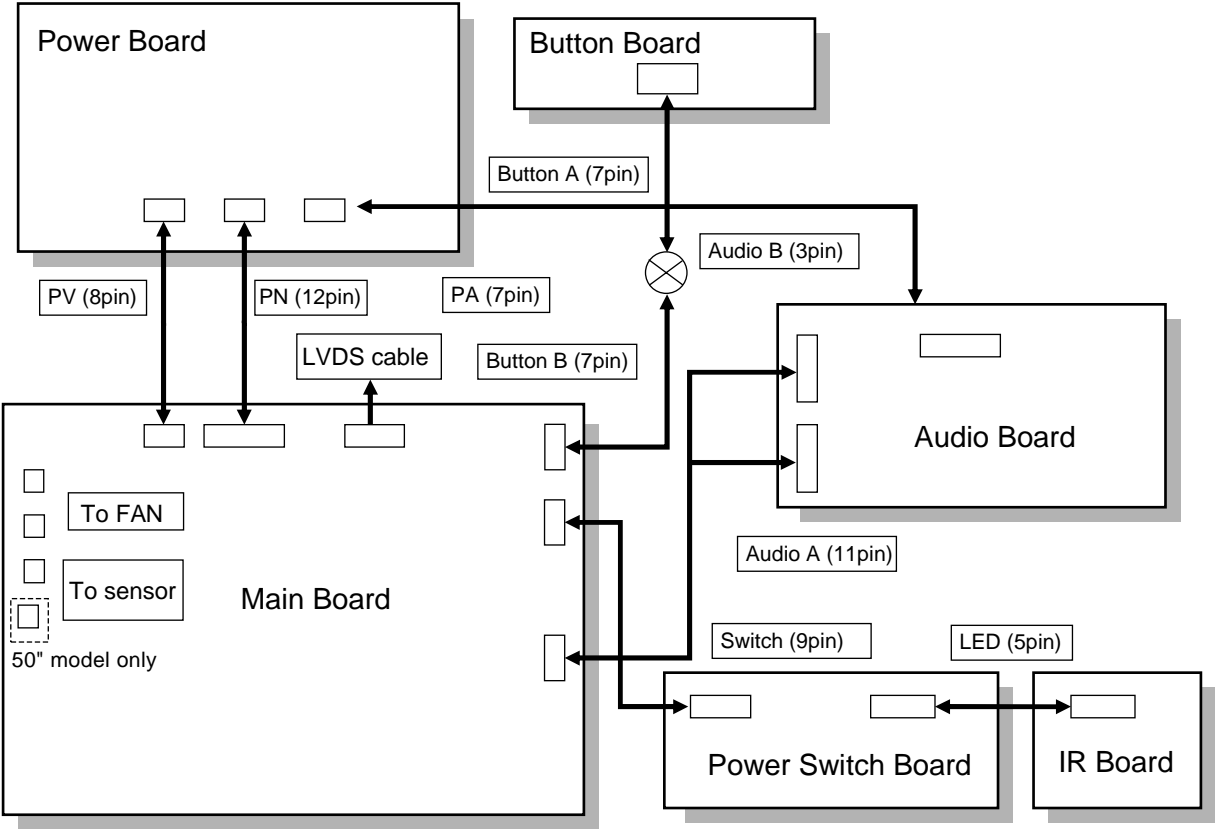
3.2 MAIN BOARD and AUDIO BOARD BLOCK DIAGRAM

● **Main Board Block Diagram**
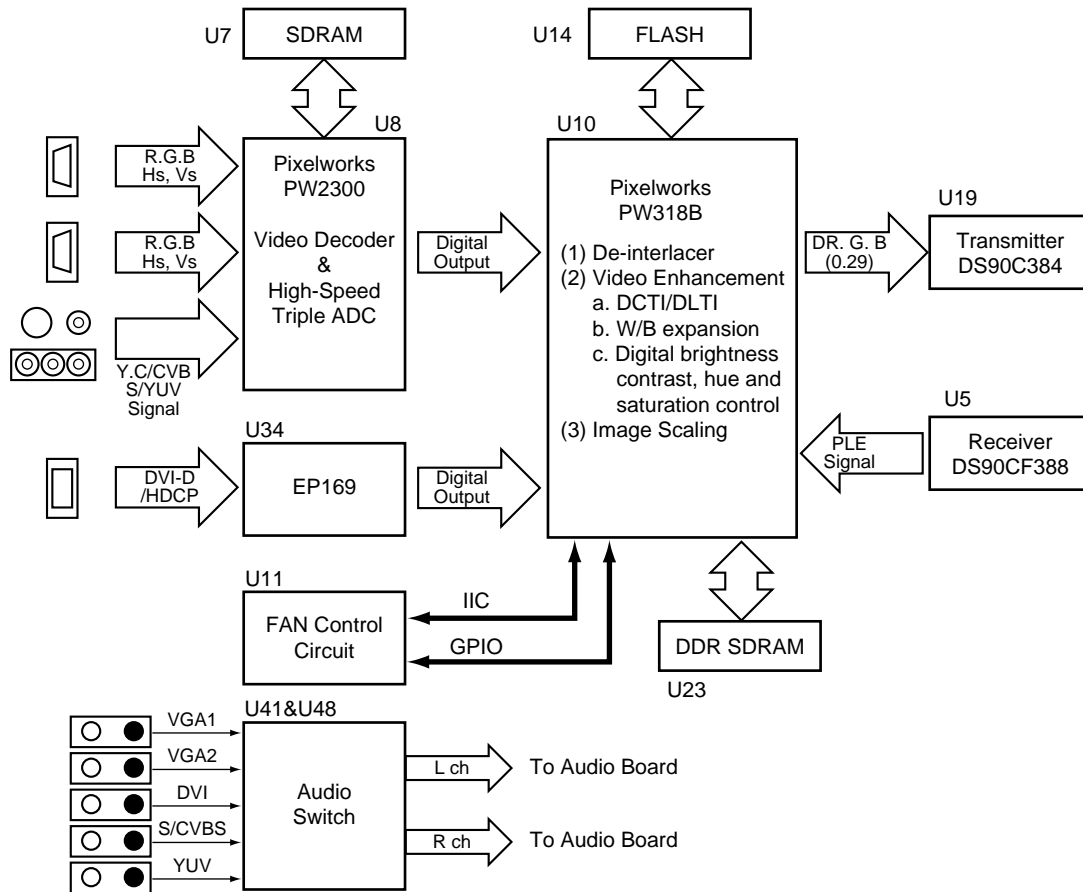
● **Audio Board Block Diagram**
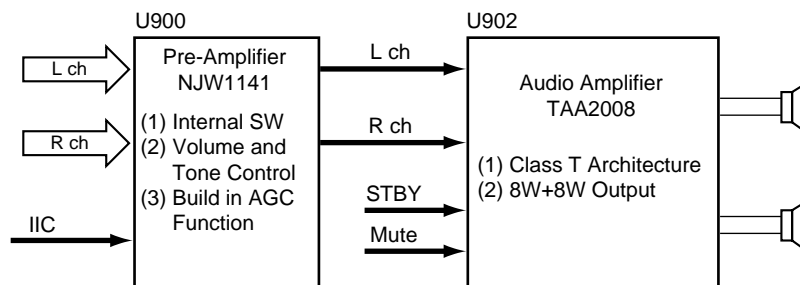
4. ADJUSTMENT

1. SERVICE MODE

1.1 How to check the accumulated power-on time (This function is not available for models with Serial No. XXX or before.)

• **Service mode**

To enter Service mode, simultaneously press the INPUT/SET key (Ⓐ) and LEFT/- key (Ⓑ) located at the lower left of the front panel of the unit. Then press the Menu key (Ⓒ) to display the Service Mode menu. To display the accumulated power-on time, select HOUR METER, using the CURSOR keys (Ⓓ) on the remote control unit. (See Figs. 1 and 2)

Notes: 1. If no signal is input to INPUT 1, the Service Mode menu will be displayed for an instant but disappear immediately. Supply signals from a PC to INPUT 1.
2. If no signal is input to any input connector of the unit, the system enters Burn-In mode.
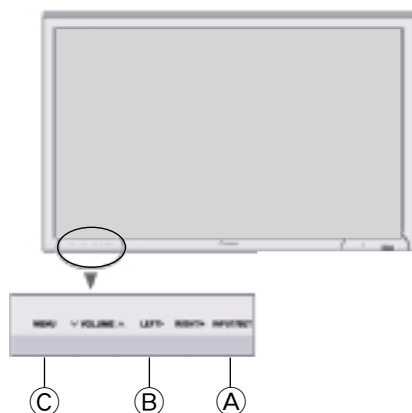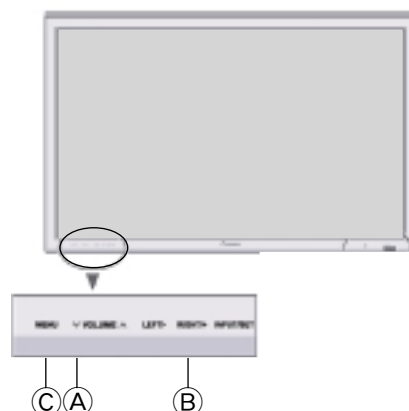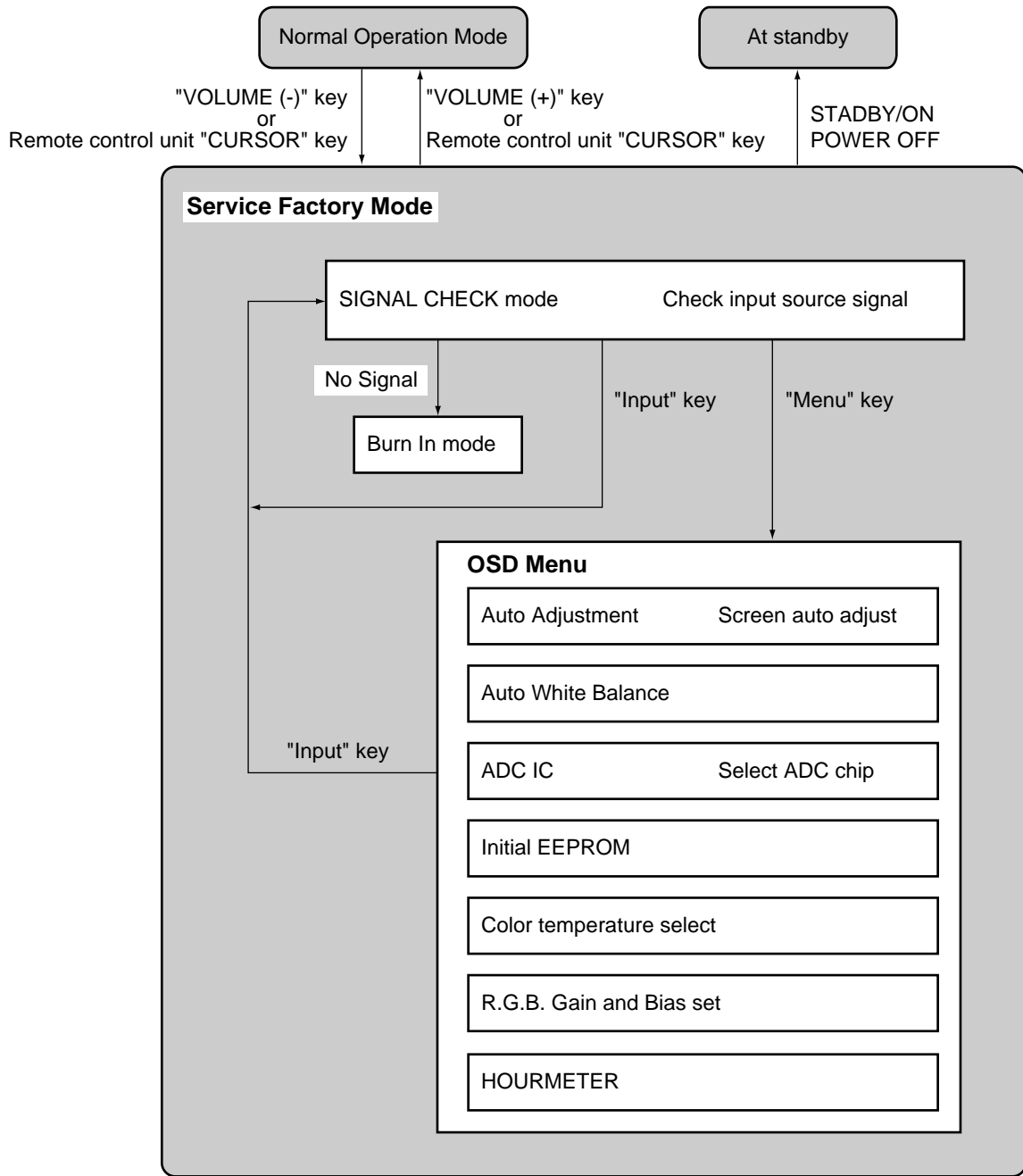

Fig. 1
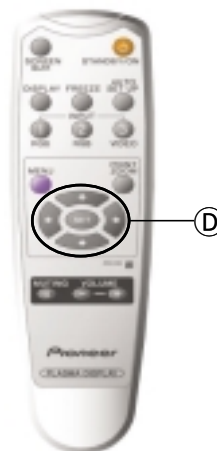
Fig. 2

2. FACTORY MODE (User setting values will be reset to default/initial settings.)

2.1 How to enter Factory mode

To enter Service/Factory mode, simultaneously press the VOL- key (Ⓐ) and RIGHT+ key (Ⓑ) of the unit. (See Fig. 3)
Then press the Menu key (Ⓒ) to display the Service/Factory menu. The menu displays the data from the input sources that offer corresponding adjustment items.

Notes: 1. If no signal is input to INPUT 1, the Service Mode menu will be displayed for an instant but disappear immediately. Supply signals from a PC to INPUT 1.
2. If no signal is input to any input connector of the unit, the system enters Burn-In mode.

Fig. 3

2.2 State Transition Diagram of Factory mode

Normal Operation Mode

At standby

"VOLUME (-)" key
or
Remote control unit "CURSOR" key

"VOLUME (+)" key
or
Remote control unit "CURSOR" key

STADBY/ON
POWER OFF

Service Factory Mode

SIGNAL CHECK mode   Check input source signal

No Signal

"Input" key   "Menu" key

Burn In mode

OSD Menu

Auto Adjustment   Screen auto adjust

Auto White Balance

ADC IC   Select ADC chip

Initial EEPROM

Color temperature select

R.G.B. Gain and Bias set

HOURMETER

"Input" key

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2.3 Service factory menu for adjustment of RGB source format in front device

This service factory mode is provided mainly to calibrate the gain and bias for three channels (R/G/B) in the front device when input source is RGB format, the calibration can be done by the automatic function (Auto White Balance) or manual to adjust each gain or bias value via R/G/B gain and Bias Items setting.

2.3.1 Basic Operation

- Connect the VGA source to input 1.
- Press the input 1 key on RUC or Input key in key pad.
- Press the menu key to open the Service factory Menu.
- Press the RIGHT+/RIGHT- key to select the adjustment item.
- Press the VOL+/VOL - key to execute the adjustment.
- Press the menu again to close the service factory mode.

2.3.2 Service Menu

```
            1       5        10        15       20       25        30       35       40
        1              PH x _ 1 _ 0 _ B A S I C _ J P
                       F a c t o r y   M o d e   I N P U T 1
           A u t o   A d j u s t m e n t                          [ > > ]
           A u t o   Wh i t e   B a l a n c e                      [ > > ]
        5  A D C     I C                                      [ 3 3 0 0 ]
           I n i t i a l   E E P R OM                              [ N O ]
           C o l o r   t e m p e r a t u r e                    [ M I D ]
              R   G a i n                                        x x x
              G   G a i n                                        x x x
        10    B   G a i n                                        x x x
              R   B i a s                                        x x x
              G   B i a s                                        x x x
              B   B i a s                                        x x x

        15
           M o v e : ▲ ▼            S e t t i n g : ◄ ►        R e t u r n : M E N U
        17
```

2.3.3 Key command

Rem Code	Key Name	Key Pad	Function	Remarks
AA0F	INPUT 1	INPUT/SET	Choose the input to input Source1	
AA8A	SET	MENU	Function Set	
AA8B	MENU	MENU	Open/Close the MENU	
AA96	▲	RIGHT+	Select the upper item	
AA95	►	VOL +	Execute the function	
AA94	◄	VOL-	Execute the function	
AA97	▼	RIGHT-	Select the lower item	
AA1C	STANDBY/ON		Power Off and Exit the Service factory Mode	

2.3.4 Timing mode and pattern for the auto white balance function

Timing Mode **:** 1024 x768 @ 16 Hz
Test Pattern **:** 16 Gray

2.3.5 Description of Adjustment Item

Item	Description	Adjustment Range	Remarks
PHX_1_0_BASIC_JP	Current F/W Version	None	
Service factory Mode INPUT1	Service factory Mode with INPUT1	None	
Auto Adjustment	Execute the phase, clock and position adjustment automatically	Enable/Disable	
Auto White Balance	Execute the gains and biases adjustment for R/G/B three Channels in ADC device	Enable/Disable	
ADC IC	To select which device is selected for Auto White Balance	PW3300/AD9883	
Initial EEPROM	Execute the initial setting of EEPROM device	Yes/No	
Color Temperature	Change the color temperature setting value.	Low/Middle-Low/Middle /Middle-High/High	
R-GAIN	Gain value for Red Channel of ADC device	0~255	
G-GAIN	Gain value for Green Channel of ADC device	0~255	
B-GAIN	Gain value for Blue Channel of ADC device	0~255	
R-BIAS	Black level for Red Channel of ADC device	0~255	
G-BIAS	Black level for Green Channel of ADC device	0~255	
B-BIAS	Black level for Blue Channel of ADC device	0~255	

2.4 Service factory menu for color temperature adjustment

This service factory mode is provided mainly to adjust the gain and bias value for each color temperature via R/G/B gain and bias adjustment items.

2.4.1 Basic Operation

- Connect the DVI source to input 3.
- Press correspond input key on RUC or INPUT/SET key (Ⓐ) to select the input source.
- Press the Menu key (Ⓑ) to open the Service factory Menu.
- Press the RIGHT+/RIGHT- key (Ⓒ) to select the adjustment item.
- Press the VOL+/VOL - (Ⓓ) to execute the adjustment.
- Press the Menu key (Ⓑ) again to close the service factory mode. (See Fig. 4)
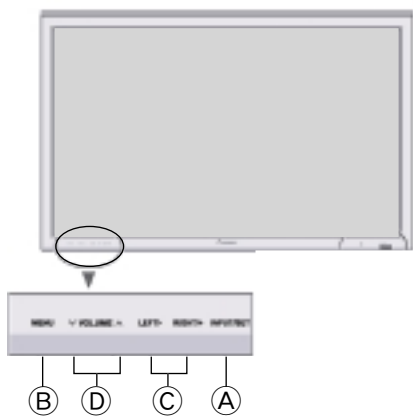
Fig. 4

2.4.2 Service Menu

	1				5					10					15					20					25					30					35					40
1				P	H	x	_	1	_	0	_	B	A	S	I	C	_	J	P																				
				F	a	c	t	o	r	y		M	o	d	e		I	N	P	U	T	2																
	A	u	t	o		A	d	j	u	s	t	m	e	n	t														[	>	>	]							
5																																							
	I	n	i	t	i	a	l		E	E	P	R	O	M													[	N	O	]								
	C	o	l	o	r		t	e	m	p	e	r	a	t	u	r	e										[	M	I	D	]							
		R		G	a	i	n																				x	x	x									
		G		G	a	i	n																				x	x	x									
10		B		G	a	i	n																				x	x	x									
		R		B	i	a	s																				x	x	x									
		G		B	i	a	s																				x	x	x									
		B		B	i	a	s																				x	x	x									
15																																							
	M	o	v	e	:	▲	▼							S	e	t	t	i	n	g	:	◄	►				R	e	t	u	r	n	:	M	E	N	U	
17																																							

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2.4.3 Key command

Rem Code	Key Name	Key Pad	Function	Remarks
AA0E	INPUT 2	INPUT/SET	Choose the input to VGA input 2	For Japanese model
AA56	INPUT 3	INPUT/SET	Choose the input for DVI	For North america and general area models
AA8A	SET	MENU	Function Set	
AA8B	MENU	MENU	Open/Close the MENU	
AA96	▲	RIGHT+	Select the upper item	
AA95	►	VOL +	Execute the function	
AA94	◄	VOL-	Execute the function	
AA97	▼	RIGHT-	Select the lower item	
AA1C	STANDBY/ON		Power Off and Exit the Service factory Mode	

2.4.4 Timing mode and pattern for the auto white balance function

The auto white balance is not supported in this service factory mode

2.4.5 Description of Adjustment Item

Item	Description	Adjustment Range	Remarks
PHX_1_0_BASIC_JP	Current F/W Version	None	
Service factory Mode INPUT2	Service factory Mode with INPUT2	None	
Auto Adjustment	Execute the phase, clock and position adjustment automatically	Enable/Disable	For Japanese model only
Initial EEPROM	Execute the initial setting of EEPROM device	Yes/No	
Color Temperature	Change the color temperature setting value.	Low/Middle-Low/Middle /Middle-High/High	
R-GAIN	Gain value for Red Channel of ADC device	0~512	
G-GAIN	Gain value for Green Channel of ADC device	0~512	
B-GAIN	Gain value for Blue Channel of ADC device	0~512	
R-BIAS	Black level for Red Channel of ADC device	0~512	
G-BIAS	Black level for Green Channel of ADC device	0~512	
B-BIAS	Black level for Blue Channel of ADC device	0~512	

A

B

C

D

E

F

2.5 Service factory menu for gain and bias adjustment of component source in front device

This service factory mode is provided mainly to calibrate the gain and bias for three channels (R/G/B) in the front device when input source is component format, the calibration can be done by the automatic function (Auto White Balance) or manual to adjust each gain or bias value via R/G/B gain and Bias Items.

2.5.1 Basic Operation

- Connect the component source to input 5.
- Press the input 5 key on RUC or INPUT/SET (Ⓐ) key.
- Press the Menu key (Ⓑ) to open the Service factory Menu.
- Press the RIGHT+/RIGHT- key (Ⓒ) to select the adjustment item.
- Press the VOL+/VOL - (Ⓓ) to execute the adjustment.
- Press the Menu key (Ⓑ) to close the service factory mode. (See Fig. 5)
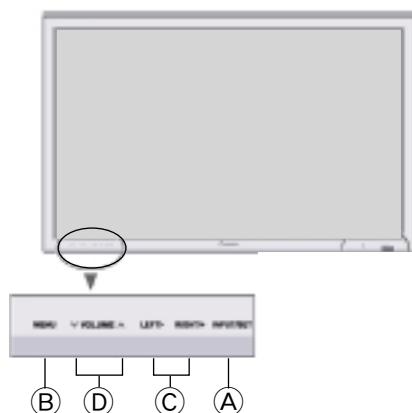
Fig. 5

2.5.2 Service Menu

```
      1       5        10        15        20       25        30        35
 1                PHX_1_0_BASIC_JP
                  FaCtory  Mode  INPUT3

     Auto  White  Balance              [ > > ]
 5   ADC     IC                        [9 8 8 3 ]
     Initial  EEPROM                   [ NO ]
     Color   temperature               [ MID ]
       R   Gain                          x x x
       G   Gain                          x x x
10     B   Gain                          x x x
       R   Bias                          x x x
       G   Bias                          x x x
       B   Bias                          x x x

15
     Move:▲▼         Setting:◄►  Return:MENU
17
```

5.3 Key command

Rem Code	Key Name	Key Pad	Function	Remarks
AA56	INPUT 3	INPUT/SET	Choose the input to input Source 3	For basic model
AAD3+AF7B	INPUT 5	INPUT/SET	Choose the input to input Source 5	For custom model
AA8A	SET	MENU	Function Set	
AA8B	MENU	MENU	Open/Close the MENU	
AA96	▲	RIGHT+	Select the upper item	
AA95	►	VOL +	Execute the function	
AA94	◄	VOL-	Execute the function	
AA97	▼	RIGHT-	Select the lower item	
AA1C	STANDBY/ON		Power Off and Exit the Service factory Mode	

5.4 Timing mode and pattern for the auto white balance function

Timing Mode : 720 x483 @ 59.94 Hz (483p)
Test Pattern   : SMPTE COLOR BAR

5.5 Description of Adjustment Item

Item	Description	Adjustment Range
HX_1_0_BASIC_JP	Current F/W Version	
ervice factory Mode PUT3	Service factory Mode with INPUT3	
uto White Balance	Execute the gains and biases adjustment for R/G/B three Channels in ADC device	Enable/Disable
tial EEPROM	Execute the initial setting of EEPROM device	Yes/No
olor Temperature	Change the color temperature setting value.	Low/Middle-Low/Middle /Middle-High/High
GAIN	Gain value for Red Channel of ADC device	0~512
GAIN	Gain value for Green Channel of ADC device	0~512
GAIN	Gain value for Blue Channel of ADC device	0~512
BIAS	Black level for Red Channel of ADC device	0~512
BIAS	Black level for Green Channel of ADC device	0~512
BIAS	Black level for Blue Channel of ADC device	0~512

6 To leave service factory mode:

Press the "VOL - (Ⓐ) " and "RIGHT+ (Ⓑ)" two keys again in the key pad simultaneously and current system working mode is in the serv factory mode, the system will leave the service factory mode and do the service factory preset function, after that, the system will back to normal operation mode. (See Fig.6)
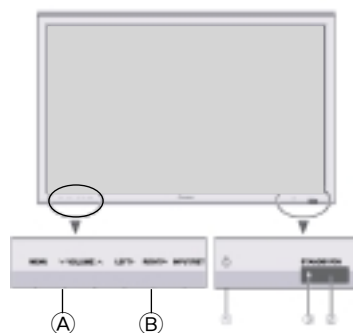
Fig.6

2.7 RS-232 Command Set

Command Name	Range (***)	Remarks	Note	Japanese Model	North america/ General area Models
AISS00	••	Auto input switch: INACTIVE	Options Menu(1)	○	○
AISS01	••	Auto input switch: ACTIVE	Options Menu(1)	○	○
AMTS00	••	Turn on the audio mute	••	○	○
AMTS01	••	Turn off the audio mute	••	○	○
APOS00	••	Auto power: OFF	Options Menu(1)	○	○
APOS01	••	Auto power: INPUT1-2	Options Menu(1)	–	○
APOS02	••	Auto power: ALL	Options Menu(1)	○	○
ASMS00	••	Auto setup mode: INACTIVE	Options Menu(1)	○	○
ASMS01	••	Auto setup mode: ACTIVE	Options Menu(1)	○	○
AST	••	Executes AUTO SETUP	IR key: Auto Set up	○	○
AVSS01	••	Sets the AV selection to STANDARD	Picture Menu	○	○
AVSS02	••	Sets the AV selection to DYNAMIC	Picture Menu	○	○
AVSS03	••	Sets the AV selection to MOVIE	Picture Menu	○	○
AVSS07	••	Sets the AV selection to USER	Picture Menu	○	○
AUSS00	••	Set the Audio source to Main	Sound Menu	–	○
AUSS01	••	Set the Audio source to Sub	Sound Menu	–	○
BAL***	000~032	Adjusts the balance(-16 ~ 0 ~ +16)	Sound Memu	○	○
BAS***	000~012	Adjusts the bass(-6 ~ 0 ~ +6)	Sound Memu	○	○
BHI***	000~100	Adjusts the B High for color temp: User	Picture Menu	○	○
BLW***	000~100	Adjusts the B Low for color temp: User	Picture Menu	○	○
BRT***	000~100	Adjusts the brightness	Picture Menu	○	○
CFR***	000~100	Adjusts the clock	Screen Menu	○	○
CLSS01	••	Color system: AUTO	Options Menu(1)	○	○
CLSS02	••	Color system: NTSC	Options Menu(1)	○	○
CLSS03	••	Color system: PAL	Options Menu(1)	○	○
CLSS04	••	Color system: SECAM	Options Menu(1)	○	○
CLSS05	••	Color system: 443 NTSC	Options Menu(1)	○	○
CLSS06	••	Color system: PAL M	Options Menu(1)	○	○
CLSS07	••	Color system: PAL N	Options Menu(1)	○	○
CNT***	000~100	Adjusts the contrast	Picture Menu	○	○
COL***	000~100	Adjusts the color	Picture Menu	○	○
CPH***	000~100	Adjusts the phase	Screen Menu	○	○
CTPS01	••	Sets the color temp to LOW	Picture Menu	○	○
CTPS02	••	Sets the color temp to MID LOW	Picture Menu	○	○
CTPS03	••	Sets the color temp to MIDDLE	Picture Menu	○	○
CTPS04	••	Sets the color temp to MID HIGH	Picture Menu	○	○
CTPS05	••	Sets the color temp to HIGH	Picture Menu	○	○
CTPS06	••	Sets the color temp to USER	Picture Menu	○	○
DNRS00	••	DNR: OFF	Options Menu(1)	○	○
DNRS01	••	DNR: LOW	Options Menu(1)	○	○
DNRS02	••	DNR: MIDDLE	Options Menu(1)	○	○
DNRS03	••	DNR: HIGH	Options Menu(1)	○	○
ESVS00	••	Energy save: STANDARD	Options Menu(2)	○	○
ESVS01	••	Energy save: MODE1	Options Menu(2)	○	○

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Command Name	Range (***)	Remarks	Note	Japanese Model	North america/ General area Models
ESVS02	••	Energy save: MODE2	Options Menu(2)	○	○
ESVS03	••	Energy save: MODE3	Options Menu(2)	○	○
FCLS00	••	Key lock: OFF	Options Menu(1)	○	○
FCLS01	••	Key lock: ON	Options Menu(1)	○	○
FDT	••	Function default	Options Menu(2)	○	○
FMKS00	••	Screen mask: OFF	Options Menu(2)	○	○
FMKS02	••	Screen mask: INVERSE	Options Menu(2)	○	○
FMKS03	••	Screen mask: WHITE	Options Menu(2)	○	○
GHI***	000~100	Adjusts the G High for color temp: User	Picture Menu	○	○
GLW***	000~100	Adjusts the G Low for color temp: User	Picture Menu	○	○
GO1	••	Get option 1 data	GET command	○	○
GO2	••	Get option 2 data	GET command	○	○
GPI	••	Get picture data	GET command	○	○
GRAS01	••	Sets the Gamma to 1.8	Picture Menu	○	○
GRAS02	••	Sets the Gamma to 2.0	Picture Menu	○	○
GRAS03	••	Sets the Gamma to 2.2	Picture Menu	○	○
GSC	••	Get screen data	GET command	○	○
GSO	••	Get sound data	GET command	○	○
HPS***	••	Adjusts the horizontal position	Screen Menu	○	○
HSI***	••	Adjusts the horizontal size	Screen Menu	○	○
IDC	••	Clear the ID:**(set to 0x00, t.b.f)	••	○	○
IDSS**	00~FF	Set the ID:** (00~FF)	Options Menu(1)	○	○
INPS01	••	Switches the main screen to INPUT1	IR key: input1	○	○
INPS02	••	Switches the main screen to INPUT2	IR key: input2	○	○
INPS03	••	Switches the main screen to INPUT3	IR key: input3	○	○
INPS04	••	Switches the main screen to INPUT4	IR key: input 4	-	○
INPS05	••	Switches the main screen to INPUT5	IR key: input 5	-	○
LGES01	••	Language: English	Options Menu(2)	○	○
LGES02	••	Language: French	Options Menu(2)	○	○
LGES03	••	Language: Espanol	Options Menu(2)	○	○
LGES04	••	Language: Dentsch	Options Menu(2)	○	○
LGES05	••	Language: Italian	Options Menu(2)	○	○
LGES06	••	Language: Japan	Options Menu(2)	○	○
LGES07	••	Language: Traditional Chinese	Options Menu(2)	○	○
MCDS01	••	Color decoding: RGB	Options Menu(1)	○	○
MCDS02	••	Color decoding: COMPONENT1	Options Menu(1)	○	○
MCDS03	••	Color decoding: COMPONENT2	Options Menu(1)	○	○
MCTS00	••	Mask control: OFF	Options Menu(2)	○	○
MCTS01	••	Mask control: ON	Options Menu(2)	○	○
ORBS00	••	Orbiter: OFF	Options Menu(2)	○	○
ORBS01	••	Orbiter: NORMAL	Options Menu(2)	○	○
ORBS02	••	Orbiter: FAST	Options Menu(2)	○	○
OSDS00	••	OSD display is forbidden	••	○	○
OSDS01	••	Permit the OSD display	••	○	○

Command Name	Range (***)	Remarks	Note	Japanese Model	North america/ General area Models
PCN	• •	Pure Cinema: OFF	Options Menu(2)	○	○
PCY	• •	Pure Cinema: ON	Options Menu(2)	○	○
POF	• •	Power off	• •	○	○
PON	• •	Power on	• •	○	○
RHI***	000~100	Adjusts the R High for color temp: User	Picture Menu	○	○
RLW***	000~100	Adjusts the R Low for color temp: User	Picture Menu	○	○
SFTS01	• •	Signal format: AUTO	Options Menu(1)	○	○
SFTS02	• •	Signal format: WIDE1	Options Menu(1)	○	○
SFTS03	• •	Signal format: WIDE2	Options Menu(1)	○	○
SFTS04	• •	Signal format: WIDE3	Options Menu(1)	○	○
SHP***	000~015	Adjusts the sharpness	Picture Menu	○	○
SMLS00	• •	Side mask level: 0	Options Menu(2)	○	○
SMLS01	• •	Side mask level: 1	Options Menu(2)	○	○
SMLS02	• •	Side mask level: 2	Options Menu(2)	○	○
SMLS03	• •	Side mask level: 3	Options Menu(2)	○	○
SMLS04	• •	Side mask level: 4	Options Menu(2)	○	○
SOFS00	• •	Soft focus: OFF	Options Menu(2)	○	○
SOFS01	• •	Soft focus: 1	Options Menu(2)	○	○
SOFS02	• •	Soft focus: 2	Options Menu(2)	○	○
SOFS03	• •	Soft focus: 3	Options Menu(2)	○	○
SOFS04	• •	Soft focus: 4	Options Menu(2)	○	○
SZMS00	• •	Sets the screen size to Dot by Dot	• •	○	○
SZMS01	• •	Sets the screen size to 4:3	• •	○	○
SZMS02	• •	Sets the screen size to FULL	• •	○	○
SZMS03	• •	Sets the screen size to ZOOM	• •	○	○
SZMS05	• •	Sets the screen size to WIDE	• •	○	○
SZMS10	• •	Sets the screen size to 2.35:1	• •	○	○
TNT***	000~100	Adjusts the tint	Picture Menu	○	○
TRE***	000~012	Adjusts the treble(-6 ~ 0 ~ +6)	Sound Menu	○	○
VISS01	• •	Video input select: COMPONENT	Options Menu(1)	○	○
VISS02	• •	Video input select: Y/C	Options Menu(1)	○	○
VISS03	• •	Video input select: COMPOSITE	Options Menu(1)	○	○
VOL***	000~050	Adjusts the audio volume	• •	○	○
VPS***	• •	Adjusts the vertical position	Screen Menu	○	○
VSI***	• •	Adjusts the vertical size	Screen Menu	○	○
WBR	••	White Balance Reset	Picture Menu	○	○

○ : Available ,　－ : Not Available

2.8 Supported timing mode for S-Video and Composite inputs

SIGNAL	V-Freq. (Hz)	H-Freq. (KHz)
PAL_M	60/1.001	15.75
PAL_N	50	15.63
PAL (B / G / D / K)	50	15.63
NTSC (3.58 / 4.43)	60/1.001	15.75
SECAM	50	15.63

2.9 Supported timing mode for component input

SIGNAL	V-Freq. (Hz)	H-Freq. (kHz)	Dot Clock (MHz)	H-Sync P l it	V-Sync P l it
720 x 480 @ 59.94	60/1.001	31.5	27	Bi_Level	Bi_level
720 x 480 @ 59.94	60/1.001	15.73	13.5	Bi_Level	Bi_level
720 x 576 @ 50	50	31.5	27	Bi_Level	Bi_level
720 x 576 @ 50	50	15.63	13.5	Bi_Level	Bi_level
1280 x 720 @ 59.94	60/1.001	44.95	74.25/1.001	Tri_level	Tri_level
1280 x 720 @ 60	60	45	74.25	Tri_level	Tri_level
1280 x 720 @ 50	50	37.5	74.25	Tri_level	Tri_level
1920 x 1080 @ 59.94	60/1.001	33.72	74.25/1.001	Tri_level	Tri_level
1920 x 1080 @ 60	60	33.75	74.25	Tri_level	Tri_level
1920 x 1080 @ 50	50	28.13	74.25	Tri_level	Tri_level

2.10 Supported timing mode for VGA and DVI input

SIGNAL	V-Freq. (Hz)	H-Freq. (kHz)	Dot Clock (MHz)	H-Sync Polarity	V-Sync Polarity	RGB Select	DVI	Standard
640 x 400 PC98	70.1	31.5	25.2	NEGA	NEGA	N/A	–	PC98 (PC by NEC)
640 x 480 VGA	59.9	31.5	25.2	NEGA	NEGA	N/A	○	VESA standard
	72.8	37.9	31.5	NEGA	NEGA	N/A	○	VESA standard
	75.0	37.5	31.5	NEGA	NEGA	N/A	○	VESA standard
	85.0	43.3	36.0	NEGA	NEGA	N/A	○	VESA standard
848 x 480 WVGA	60.0	31.0	33.8	POSI	POSI	N/A	○	VESA standard
852 x 480 WVGA	60.0	31.7	34.0	NEGA	NEGA	N/A	○	I/O DATA
800 x 600 SVGA	56.3	35.2	36.0	POSI	POSI	N/A	○	VESA standard
	60.3	37.9	40.0	POSI	POSI	N/A	○	VESA standard
	72.2	48.1	50.0	POSI	POSI	N/A	○	VESA standard
	75.0	46.9	49.5	POSI	POSI	N/A	○	VESA standard
	85.1	53.7	56.3	POSI	POSI	N/A	○	VESA standard
1024 x 768 XGA	60.0	48.4	65.0	NEGA	NEGA	N/A	○	VESA standard
	70.1	56.5	75.0	NEGA	NEGA	N/A	○	VESA standard
	75.0	60.0	78.8	POSI	POSI	N/A	○	VESA standard
	85.0	68.7	94.5	POSI	POSI	N/A	○	VESA standard
1280 x 768 WXGA	56.3	45.1	76.2	NEGA	NEGA	N/A	–	PIONEER original
	59.9	47.8	79.5	NEGA	POSI	wide2	○	CVT
	69.8	56.0	95.0	NEGA	POSI	N/A	○	CVT
1280 x 800	59.8	49.7	83.5	NEGA	NEGA	N/A	○	CVT

SIGNAL	V-Freq. (Hz)	H-Freq. (kHz)	Dot Clock (MHz)	H-Sync Polarity	V-Sync Polarity	RGB Select	DVI	Standard
1280 x 854	59.9	53.1	89.3	NEGA	NEGA	N/A	○	PC
1152 x 864	75.0	67.5	108.0	POSI	POSI	N/A	○	VESA standard
1280 x 1024 SXGA	60.0	64.0	108.0	POSI	POSI	N/A	○	VESA standard
	75.0	80.0	135.0	POSI	POSI	N/A	○	VESA standard
	85.0	91.1	157.5	POSI	POSI	N/A	○	VESA standard
1360 x 768 WXGA	60.0	47.7	85.5	POSI	POSI	wide1	○	I/O DATA
1376 x 768 WXGA	59.9	48.3	87.3	NEGA	POSI	N/A	○	I/O DATA
1600 x 1200 UXGA	60.0	75.0	162.0	POSI	POSI	N/A	○	VESA standard
	65.0	81.3	175.5	POSI	POSI	N/A	−	VESA standard
	70.0	87.5	189.0	POSI	POSI	N/A	−	VESA standard
	75.0	93.8	202.5	POSI	POSI	N/A	−	VESA standard
	85.0	106.3	229.5	POSI	POSI	N/A	−	VESA standard
1680 x 1050	60.0	65.3	146.3	NEGA	NEGA	N/A	−	CVT
1920 x 1200	59.9	74.6	193.3	NEGA	NEGA	N/A	−	CVT
1920 x 1200RB	60.0	74.0	154.0	NEGA	NEGA	N/A	○	CVT
640 x 480 Mac'13	66.7	35.0	30.2	Sync on G	Sync on G	N/A	−	Mac'13 (sync on G)
832 x 624 Mac'16	74.5	49.7	57.3	Sync on G	Sync on G	N/A	−	Mac'16 (sync on G)
1024 x 768 Mac'19	74.9	60.2	80.0	Sync on G	Sync on G	N/A	−	Mac'19 (sync on G)
1152 x 870 Mac'21	75.1	68.7	100.0	Sync on G	Sync on G	N/A	−	Mac'21 (sync on G)
1440 x 900	59.9	55.9	106.5	NEGA	NEGA	N/A	○	Apple17
1280 x 1024 EWS4800*1	60.0	64.6	*1	NEGA	NEGA	N/A	○	EWS Work Station
1280 x 1024 EWS4800	71.2	75.1	125.0	NEGA	NEGA	N/A	○	EWS Work Station
1280 x 1024 HP	72.0	78.1	135.0	POSI	POSI	N/A	○	HP Work Station
1152 x 900 SUN	66.0	61.8	92.9	C sync	C sync	N/A	○	SUN, (C sync)
	76.0	71.7	105.6	C sync	C sync	N/A	○	SUN, (C sync)
1280 x 1024 SUN *2	76.1	81.1	*2	C sync	C sync	N/A	○	SUN, (C sync)
1024 x 768 SGI	60.0	49.7	70.0	NEGA	NEGA	N/A	○	SGI Work Station
1280 x 1024 SGI*1	60.0	63.9	*1	NEGA	NEGA	N/A	○	SGI Work Station
1400 x 1050@60 SXGA+	59.978	65.3	121.75	NEGA	POSI	N/A	○	CVT
1400 x 1050@75 SXGA+	74.867	82.3	156	NEGA	POSI	N/A	○	CVT
1400 x 1050@85 SXGA+	84.960	93.9	179.5	NEGA	POSI	N/A	○	CVT
720 x 480 @ 59.94	60/1.001	31.5	27	Bi_Level	Bi_level	N/A	○	
720 x 480 @ 59.94	60/1.001	15.73	13.5	Bi_Level	Bi_level	N/A	−	
720 x 576 @ 50	50	31.5	27	Bi_Level	Bi_level	N/A	○	
720 x 576 @ 50	50	15.63	13.5	Bi_Level	Bi_level	N/A	−	
1280 x 720 @59.94	60/1.001	44.95	74.25/1.001	Tri_level	Tri_level	N/A	○	
1280 x 720 @60	60	45	74.25	Tri_level	Tri_level	N/A	○	
1280 x 720 @50	50	37.5	74.25	Tri_level	Tri_level	N/A	○	
1920 x 1080 @ 59.94	60/1.001	33.72	74.25/1.001	Tri_level	Tri_level	N/A	○	
1920 x 1080 @ 60	60	33.75	74.25	Tri_level	Tri_level	N/A	○	
1920 x 1080 @ 50	50	28.13	74.25	Tri_level	Tri_level	N/A	○	

○ : Available ,   − : Not Available

5. PCB PARTS LIST

NOTES: ● Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
●The ⚠ mark found on some component parts indicates the importance of the safety factor of the part.

Mark	No.	Description	Part No.
	LIST OF WHOLE PCB ASSEMBLIES		
	0..PH3 M/B ASSY (DVI)		21PH3MB0041
	1..PH3 M/B C/S ASSY(FOR PH4)		31PH4CS0012
	1..PH3 M/B S/S ASSY(FOR PH4)		41PH4SS0015
	1..PH3 AUDIO BOARD ASSY		36PH3AB0003
	1..PH3 IR/B ASSY		35PH3IB0009
	1..PH3 POWER_SW/B ASSY		34PH3PB0000
	1..PH3 BUTTON/B ASSY		33PH3BB0005
	1..PH3 SENSOR/B ASSY		3LPH3SB0001

Mark	No.	Description	Part No.
	PH3 MB ASSY		
	MISCELLANEOUS		
	FB47-FB53,FB59-FB66	EMI FBMA-11-160808-601A10T (600,1A)EP	CX160808513
	FB39-FB44,FB46,FB54-FB58	EMI FBMA-11-201209-601A20T (600,2A)EP	CX201209716
	D40-D41,D43,D47,D51-D53,D56	DIODE,SMD LL4148PT(75V,0.15A) EP	BCLL4148Z19
	D18-D25	DIODE ZENER MMBZ5232BPT(5.6V,SOT23)EP	BD005232Z15
	ZD7-ZD18	DIODE SMD ZENER MMGZ5232BPT(5.6V)EP	BD005232Z23
	Q19-Q20,Q23-Q24,Q27,Q30	TRANS SMD MMBT3904(40V,200MA)SOT23 EP	BA039040039
	Q35-Q36,Q40,Q43,Q45-Q46,Q65	TRANS SMD MMBT3904(40V,200MA)SOT23 EP	BA039040039
⚠	U28-U29	IC(3P) AP1117E33LA (SOT-223)EP	AL011733006
	U30-U31	IC(6P) NC7WZ14P6X_NL(SC70-6)EU	AL07WZ14011
	U32	IC EEPROM(8P) 24LC02BT-I/SNG(2K,SOIC)EP	AKE3K8B0Y50
	Q26,Q28,Q33	TRAN SMD MMBT3906LT1G(40V,200MA)EP	BA039060013
	U1	IC(16P) MAX232DR (SOIC) EP	AL000232019
		IC(8P) LM393DR2G (SO-8) EP	AL000393047

Mark	No.	Description	Part No.
	PH3 M/B S/S ASSY		
	MISCELLANEOUS		
	L1-L3	IND 560NH 230MA +-5% LLQ2012-FR56J EP	CV+5603JN03
	L4-L6	IND SMD 10NH +-5% 300MA (HK212510NJ-T)EU	CVA1003JZ17
	FB1-FB9	EMI FBMA-10-160808-300T (30,300MA)EP	CX808300019
	FB78,FB81,FB90,FB92,FB94	EMI FBMA-11-160808-601A10T (600,1A)EP	CX160808513
	FB35-FB37	EMI FBMA-11-160808-121-A20T (120,2A)EP	CX808121114
	FB10-FB19,FB21-FB26,FB29,FB34,FB45	EMI FBMA-11-201209-601A20T (600,2A)	CX201209716
	FB31-FB33,FB77	EMI FBMA-11-321611-601-A30T (600,3A)EP	CX611601012
	FB28,FB30	EMI FBMA-11-201209-121-A50T (120,5A)EP	CX209121010
	U10	IC (379P)PW318B-10L(PBGA)EP	AJ003180T05
	U8	IC (256P)PW2300-10L(LFBGA)EP	AJ023000T02
	U23	IC DDR SDRAM EM6A9320BI-5MG (FBGA)EP	AKD37W-T-16
	U7	IC SDRAM (50P)16M EM636165TS-6G (TSOPII)EP	AKD24G-K-06
	U14	IC,FLASH ROM (48P)29LV800BTTC-70G (TSOP)EP	AKE35ZAKZ16
	U19	IC (100P) EP387A (48BIT,112M,LQFP) EP	AJ00387#F00
	U19	IC (100P) DS90C387AVJD (48BIT,TQFP) EP	AJ003870H04
	U25	IC (8P) DS90LV018ATM (SOP) EP	AJ000180009
⚠	U16-U17	IC (8P) G994P1U (SOP) EP	AL000994008
	U11	IC (20P) G791SFU (SSOP) EP	AL000791C01
	U12	IC EEPROM (8P) 24LC32A-I/SNG (32K,400KHZ)EP	AKE31ZB0Y05
	U4	IC EEPROM(8P) 24LC02BT-I/SNG(2K,SOIC) EP	AKE3K8B0Y50
	U2-U3	IC(6P) NC7WZ14P6X_NL(SC70-6) EU	AL07WZ14011

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Mark	No.	Description	Part No.
	Q2,Q4-Q5,Q13,Q25,Q31,Q37,Q58	TRANS SMD MMBT3904(40V,200MA)SOT23 EP	BA039040039
	Q60-Q62,Q64	TRANS SMD MMBT3904(40V,200MA)SOT23 EP	BA039040039
	Q10,Q12	TRANS MOS CH2507SPT(60V,0.25A)SOT23 EP	BAM25070017
	D4-D9	DIODE SMD SW21570PT(VRRM:85V,150MA) EP	BC021570Z18
	D1-D2	DIODE SMD CHN202UPT(80V,100MA) EP	BC000202Z28
	D38,D44,D46,D49	DIODE,SMD LL4148PT(75V,0.15A) EP	BCLL4148Z19
	D34,D59	DIODE SSM14PT(40V,1A)SCHOTTK SMA EP	BC0SSM14Z30
	ZD1-ZD6	DIODE SMD ZENER MMGZ5232BPT(5.6V) EP	BD005232Z23
⚠	U6,U15,U18,U24	IC (3P)SMD AP1084DLA(T0-252) EP	AL001084099
⚠	U5,U9	IC (3P) AP1117E18LA (SOT-223) EP	AL011718007
⚠	U26	IC (3P) AP1117E25LA (SOT-223) EP	AL011725020
⚠	U13,U27	IC (3P) AP1117E33LA (SOT-223) EP	AL011733006
	CON18	CONN SMD HEADER 40P 2R MS (P1.25,H4.8) EP	DFHD40MS976
	ZD23	DIODE ZENER SMD MMGZ5240BPT(10V) EP	BDGZ5240Z14
	D35,D37	DIODE,SMD CH420DPT(40V,0.1A,SHTKY) EU	BCCH420DZ14
	U42,U44-U45	IC (16P) 74HC123PW (TSSOP) EU	ALHC0123K07
	U50	IC (8P) LM393DR2G (SO-8) EP	AL000393047
	U41,U48	IC (16P) MAX4581CSE+ (SOIC) EP	AL004581000

PH3 M/B C/S ASSY

MISCELLANEOUS

	CON3-CON4	CONN D-SUB 15P 3R FR(P2.29,H12.42)EU	DFDB15FR037
	P1	CONN D-SUB 9P 2R MR(P2.77,H12.5)BLACK EP	DFDS09MR0A5
	J3	CONN DIP RCA JACK 3P 2R FR(H27)R,W EU	DFRJ06FR020
	J1-J2	CONN DIP PHONE JACK 5P FR(H10) LIME EP	DFTJ05FR380
	CON10,CON13	CONN DIP HEADER 3P 1R MS(P2.0,H6.0)EP	DFHD03MS673
	Y1	XTAL DIP 27MHZ (20PPM,20PF,9B27000100)EP	BG627000220
	Y2	XTAL 14.318MHZ(20PPM,16PF,9B14300511)EP	BG614318188

PCB (AUDIO/B) PH3 AB ASSY

MISCELLANEOUS

	D90,D92	DIODE SMD SW1010CPT(100V,100MA) EP	BC001010Z17
	U900	IC (30P) NJW1141M-#ZZZB (SDMP) EP	AL001141017
⚠	U901	IC (3P) MM1117DTA(TO-252)EP	AL0011170W7
⚠	U902	IC (32P) TAA2008(QFN)EP	AL002008001
	FB90-FB95	EMI FBMA-11-160808-121-A20T (120,2A) EP	CX808121114
	Q900-Q901	TRAN SMD MMBT3906LT1G (40V,200MA) EP	BA039060013

PH3 AUDIO BOARD C/S ASSY

MISCELLANEOUS

	C946	CAP ELEC 330U 16V (+-20%,105C,8*11,2000HR	CC73303MD51
	L90-L93	IND DIP 10UH+-10% 2A (SL0912T-100K-1-N) EP	CV01020KD17
	C958,C961-C962	CAP ELEC 1000U 16V (20%,105C,10*16) EP	CC81003MD81
	L94	IND DIP 75UH +-10% 3A EP	CV07530KD24
	CON94	CONN DIP HEADER 7P 1R MS (P2.5,H7)L-F	DFHD07MS485
	CON90	CONN DIP HEADER 11P 1R MS(P2.0,H6) L-F	DFHD11MS091
	J90	CONN DIP SPK JACK 4P FR(H20,P13) EP	DFRJ04FR039
		HEAT SINK A/B PH3(FBPH3007 REV 3A)	FBPH3007017
		SCREW M3*6-P(BNI)	MS30060PBA5

PCB(IR/B) PH3 IR/B ASSY

MISCELLANEOUS

	U2	IC (5P) 74LVC1G126GW (SC-88A) EP	AL1G0126023

PH3 IR/B ASSY

MISCELLANEOUS

	U1	LED DIP (3P) IR RECIVER(B)TSOP34840SB1 EP	BEBK0037D01
	LED1	LED DIP (3P) RED ORANGE/GREEN (LTL-1BEHJ) EP	BEAG0004DA9

Mark No.	Description	Part No.
CN3	CONN DIP HEADER 5P 1R MR (P2.0,H5) EP	DFHD05MR0A3

PH3 POWER_SW/B ASSY

MISCELLANEOUS

CN1	CONN DIP HEADER 5P 1R MS(P2.0,H6.6) EP	DFHD05MS052
SW1	SWITCH PUSH BUTTON DIP 6P SPUN191400 EU	DHP19140009

PCB(BUTTON/B)PH3 BB ASSY

MISCELLANEOUS

S1,S2,S3,S4,S5,S6	SWITCH PUSH BUTTON STS-017-A EP	DHPSTS01705

PH3 BUTTON/B ASSY

MISCELLANEOUS

CN1	CONN DIP HEADER 7P 1R MR(P1.25,H3.5) EP	DFHD07MR0A2

PCB SENSOR/B ASSY

MISCELLANEOUS

Q1	TRANSISTOR DIP 2N3904RLRAG(TO-92)EP	BAN39040D01
CON1	CONN DIP HEADER 3P 1R MS(P2.0,H6.0)EP	DFHD03MS673

PDP-425MX

6. DISASSEMBLY

1 Back Cover , Front Panel Assy

• Back Cover section

① Remove the 37 screws. x 37

② Remove the 6 screws. x 6

③ Remove the 4 screws. x 4

④ Remove the Back Cover.

① x 8

Back Cover

① x 2
② ②
③ ③
① x 3
④
① x 5
② ②
③ ③
① x 5
① x 2
② ①x 6 ②
① x 6
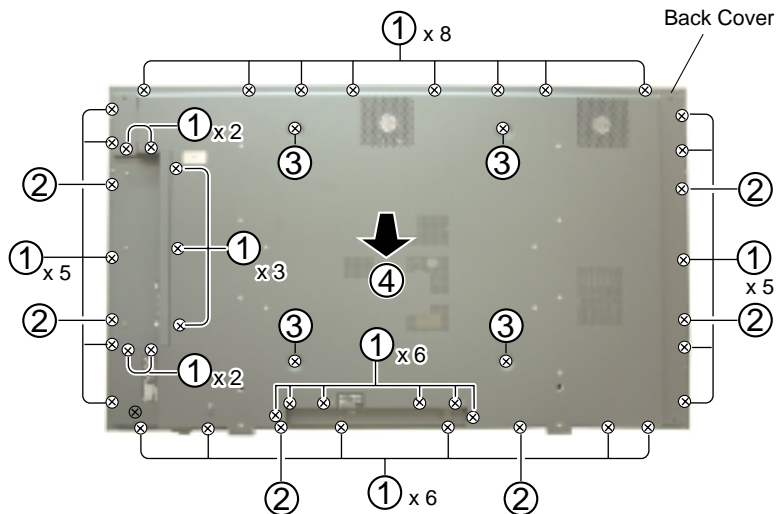
• Front Panel section

Method 1.

① Remove the Back cover. (Refer to "Back cover section")

② Remove the Front panel.

②
Front panel
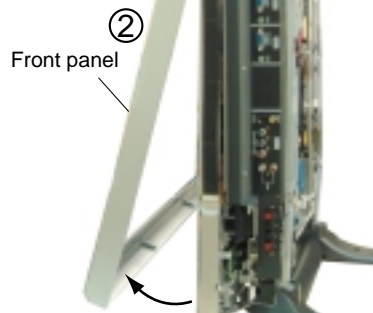
Method 2.

① Remove the 6 screws. x 6

② Remove the Front panel.

Back Cover

① ①
① ①
① ①
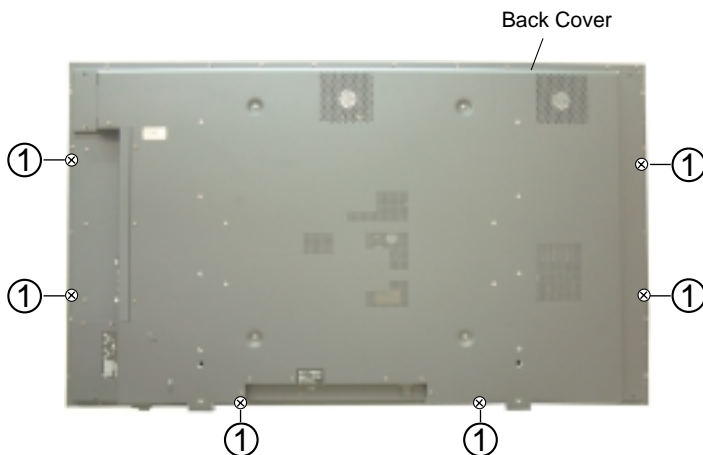
2 Input Block

① Remove the 2 screws.

② Remove the bracket option L Assy.

③ Remove the 4 screws.

④ Remove the shield cover main Assy.
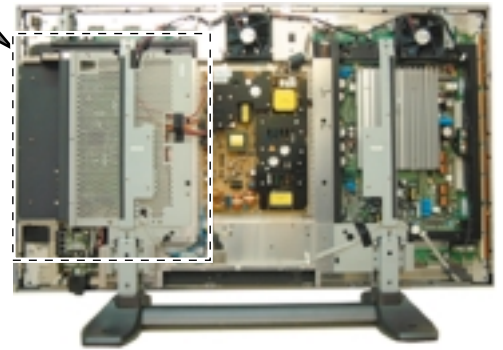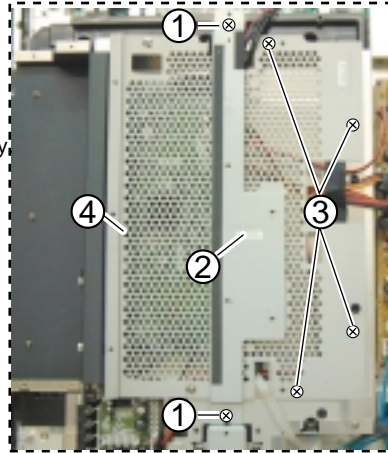
⑤ Disconnect the 4 connectors.

⑥ Remove the screw and GND terminal.

⑦ Remove the 3 screws.

⑧ Remove the 4 screws.

⑨ Remove the 6 Hexagon head screws.

⑩ Remove the M/B Assy.

Input Assy
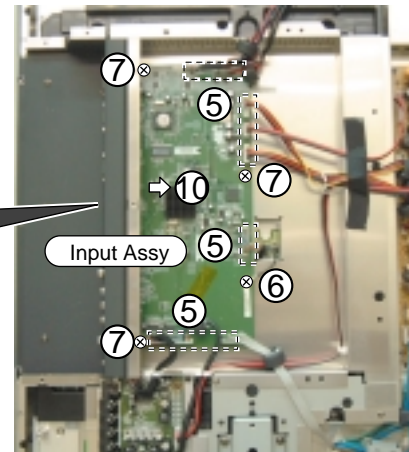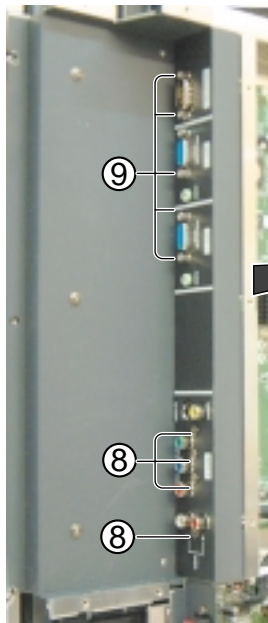
3 Power Block

① Disconnect the 3 connectors.

② Remove the 10 screws.

③ Remove the Pwr Assy.

Pwr Assy
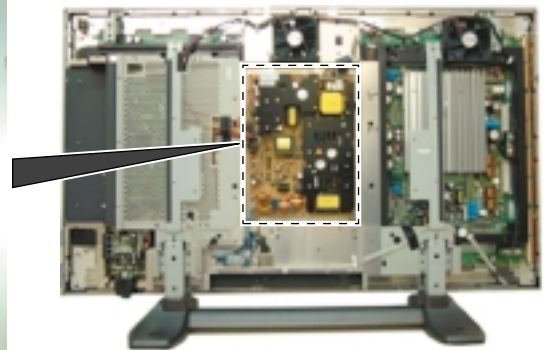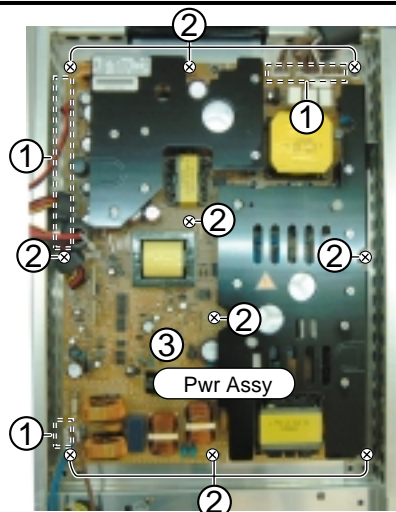
4 Sub flme Assy Block

① Remove the 2 screws.

② Remove the bracket option L Assy.

③ Remove the 4 screws.

④ Remove the shield cover main Assy.
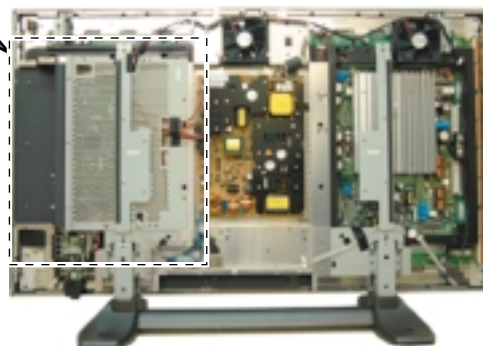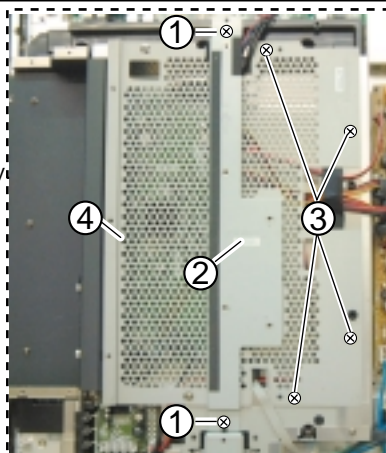
⑤ Remove the 17 screws.

⑥ Remove the screw and GND terminal.

⑦ Disconnect the connectors.

PDP-425MX
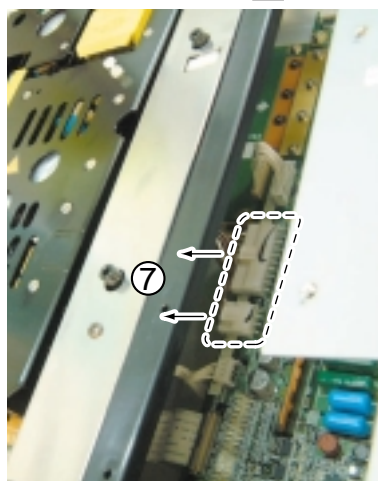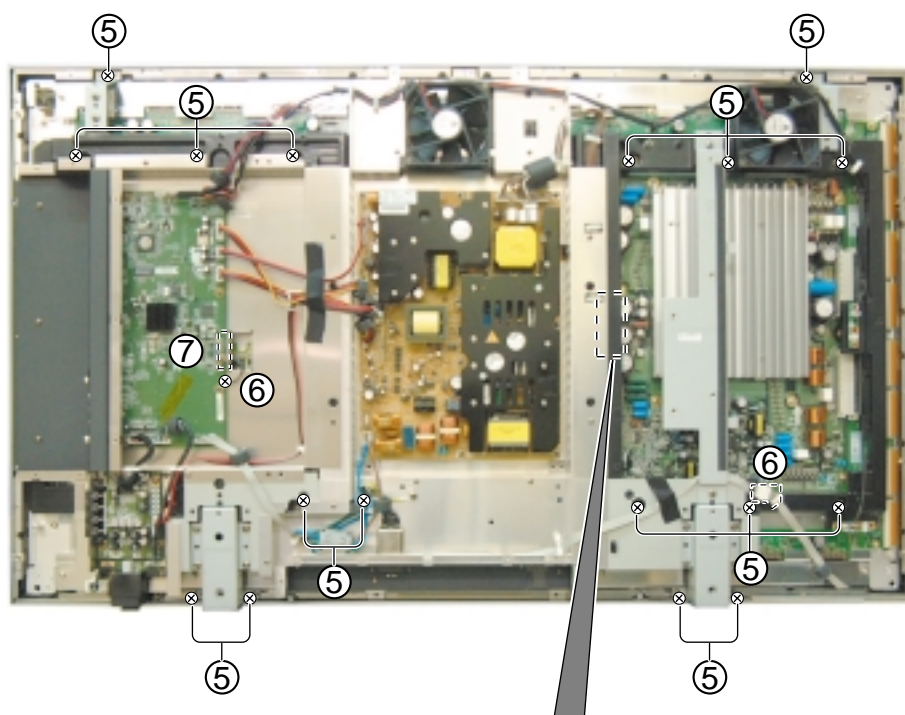
① Remove the sub flame Assy Block
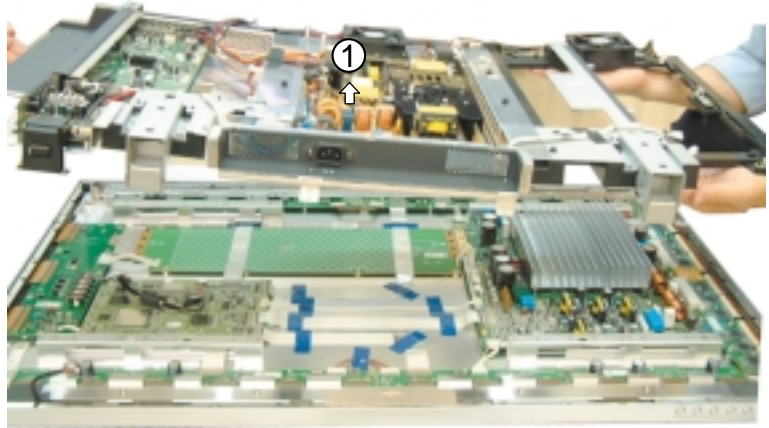
• Sub flme Assy Block
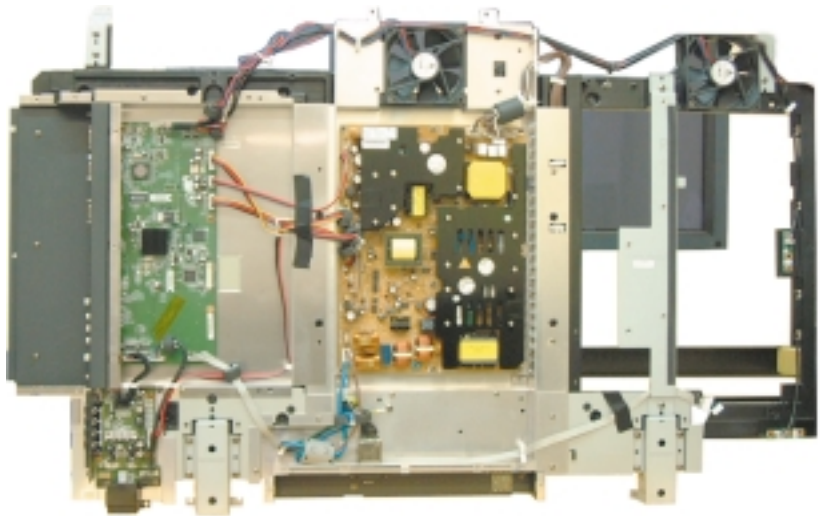
• Panel module Block

① Remove the Gasket

② Remove the module Block

② Module Block

①

A
B
C
D
E
F
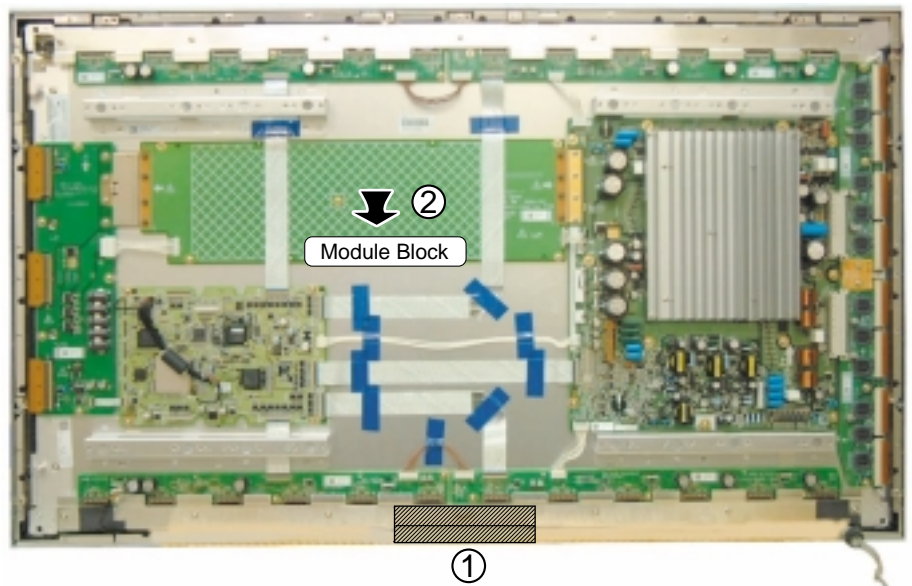
5 Front Panel Assy Block

A

① Remove the 12 screws.

② Remove the 12 screws.

③ Remove the 12 screws.

① x 6

① x 6

② x 6

② x 6

③ x 3

③ x 6

③ x 3

B

C

D

E

F
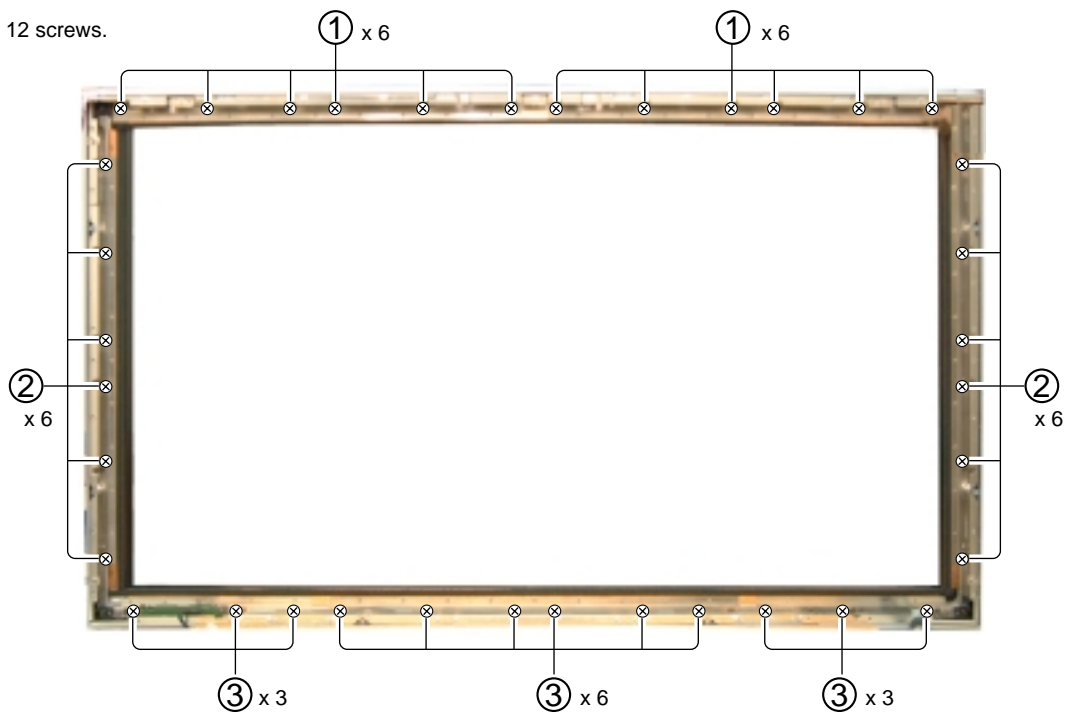
7. DIAGNOSIS OF THE PDP MODULE

1. TROUBLE SHOOTING

Follow the procedure below for failure diagnosis. Keep wearing Antistatic List Band until you finish the work.

Procedure on After-sale Service

| From Service Manual of the product | → | (1) Model, Serial No. and Panel ID. |

↓

Exchange PDP ← **NG** — (2) Panel Crack

OK ↓

Reconnect or exchange ← **NG** — (3) Connectors/Cables

OK ↓

Reuse ← **OK** — Phenomenon

NG ↓ **Reproduction**

| (4) Pixel Defect | (5) Vertical Line | (6) Horizontal Line | (7) Picture Defect | (8) Power-off |
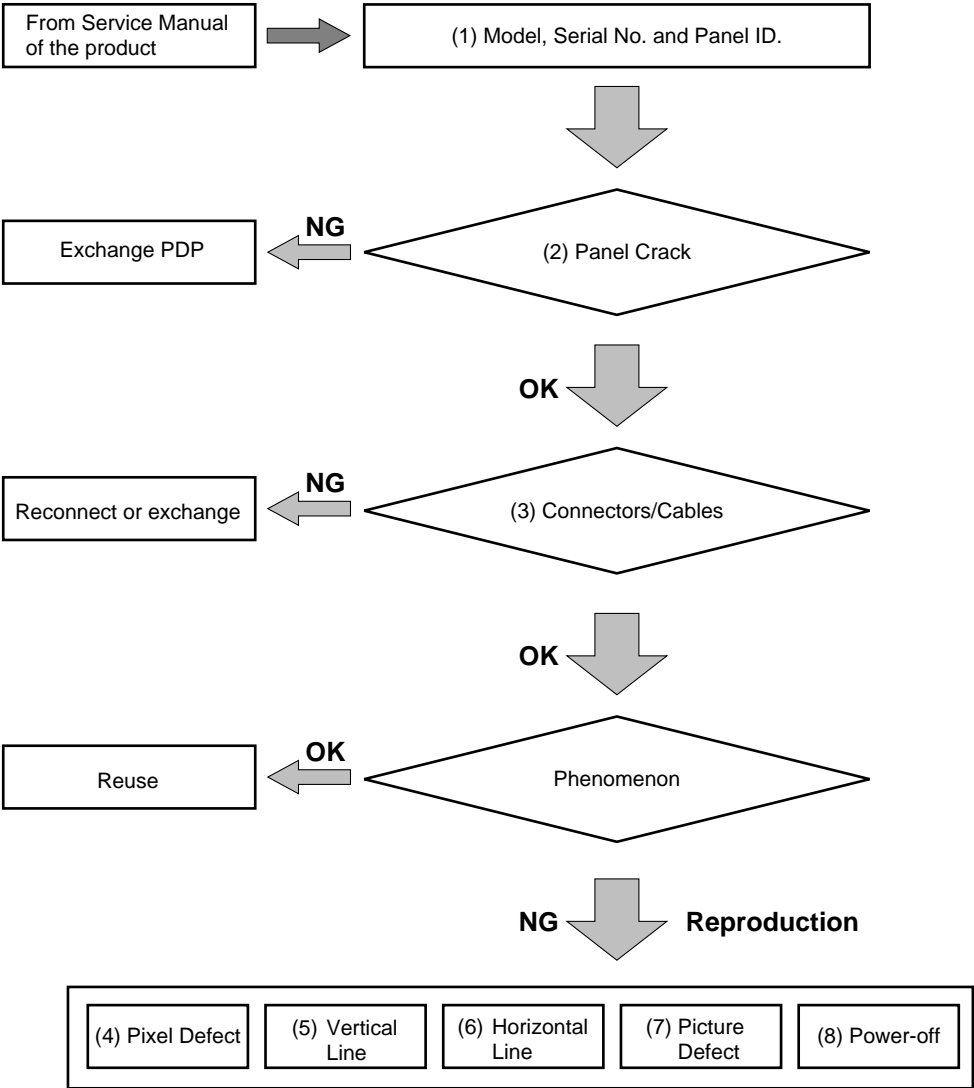
A

(1) Model, Serial No., and Panel ID

Refer to the photographs below to find Model, Serial No. and Panel ID.

Model/Serial No.

B

NEC

408200943   MODEL NP42H5MF01
             MADE IN JAPAN
             CODE AA-C3

NEC Plasma Display Corporation

C
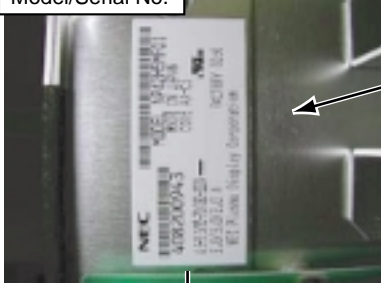
Above Example
Model: NP42H5MF01AA
Serial No.: 408200943
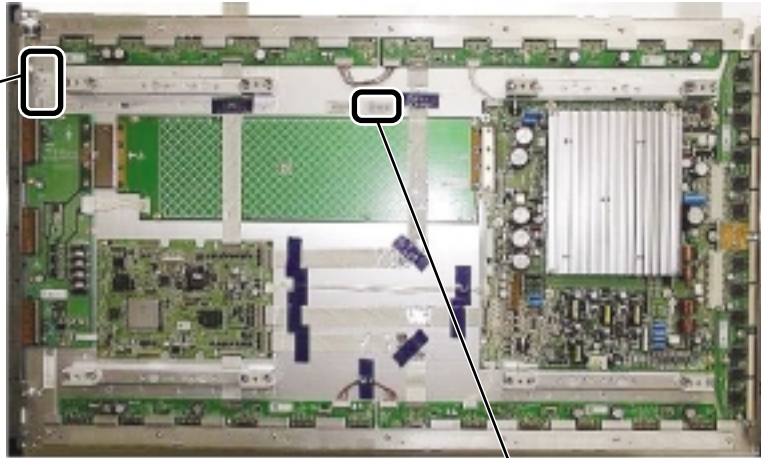
Panel ID

222407145612

D

(2) Panel Crack

Refer to the photographs below to check panel for crack.

E

F
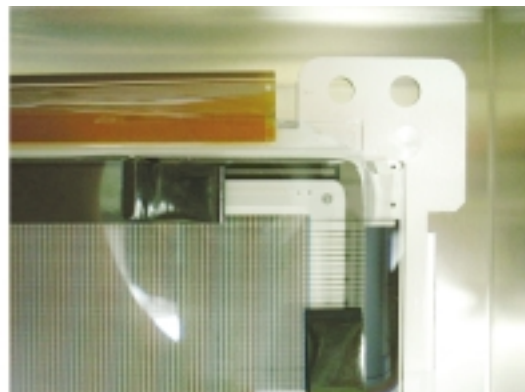
Panel may be cracked due to handling during or after transportation.

A

(3) Connectors/Cables

(3-1) Check connectors and cables for breakage or disconnection referring to the photos below.

Data Relay Flexible Cable (UP)

Common Voltage Flexible Cable

Scan Voltage Flexible Cable

Data Relay Flexible Cable (Down)
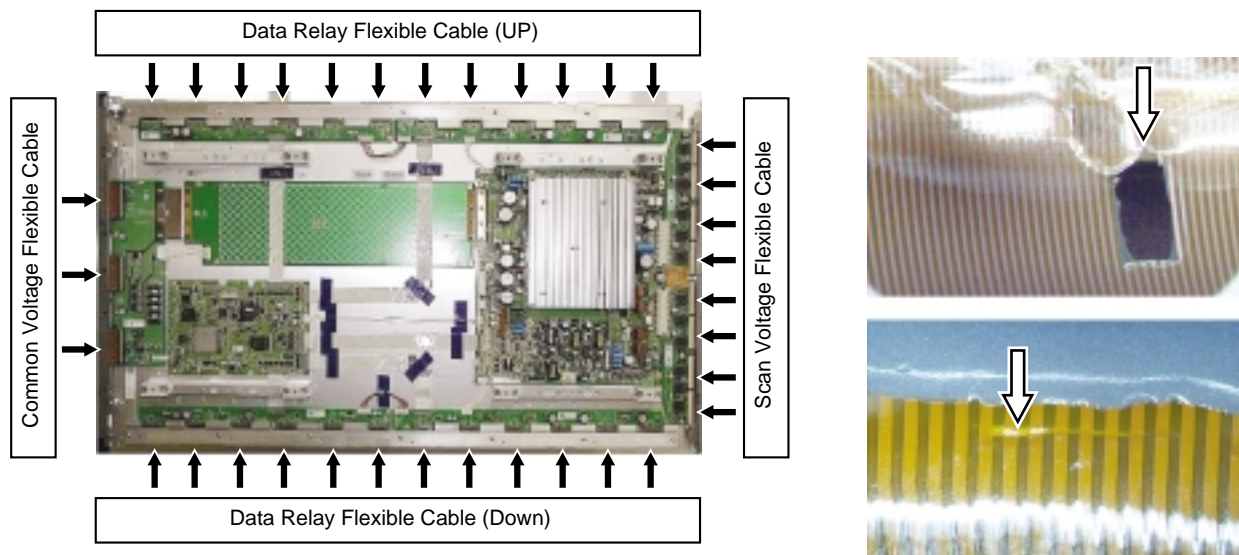
Caution: Take care for the cable handling. Careless handling in production line may cause this failure.

(3-2) Check connectors and cables whether they are connected and locked right.
See the following right procedure of connection.

Data Relay Board (LU)   Data Relay Board (RU)

Common Connection Board

Common Relay Board

Digital Board

High Voltage Board

Scan Relay Board(U)

Scan Relay Board (D)

Data Relay Board (LD)   Data Relay Board (RD)

PDP-425MX
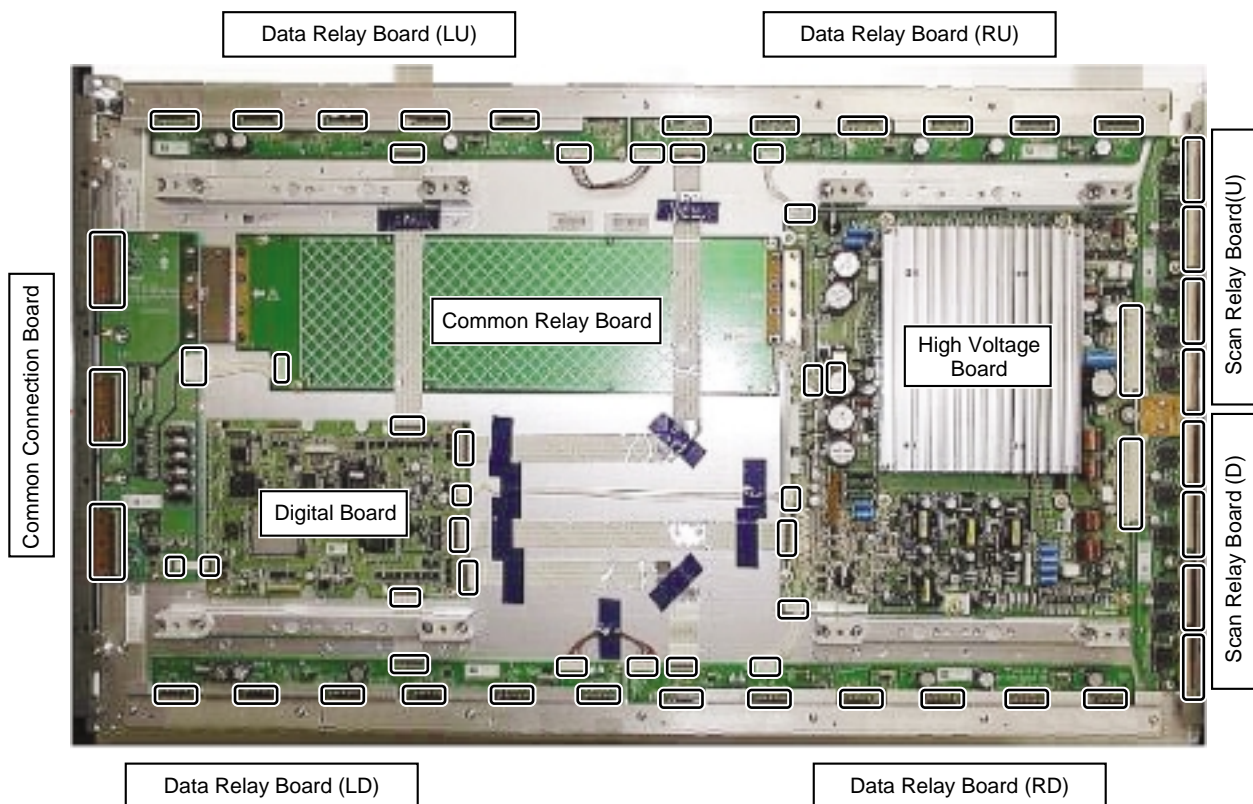
A

Right Connection (Part 1)

High voltage Board (Photo)
↔ Digital Board

Scan Relay Board (Photo)
↔ Panel

Common Relay Board (Photo)
↔ Panel

Locked

B
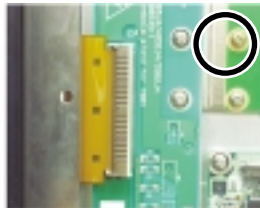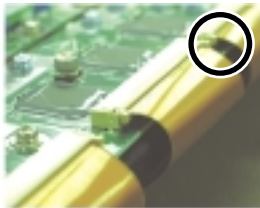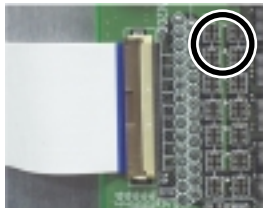
Unlocked
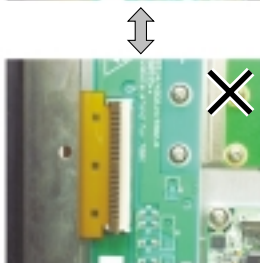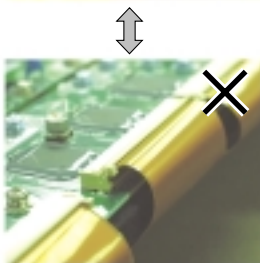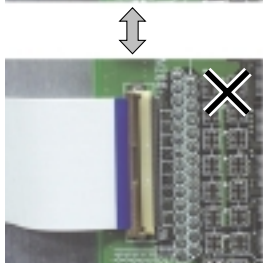
Right Connection (Part 2)

C

Digital Board (Photo)
↔ High Voltage Board

High Voltage Board (Photo)
↔ Data Relay Board

High Voltage Board (Photo)
↔ Scan Relay Board (Photo)

Locked

D
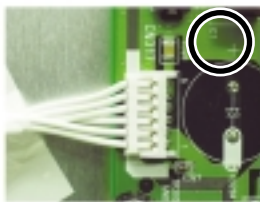
Unlocked
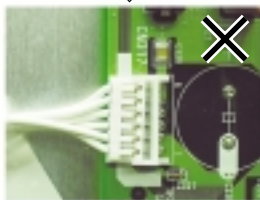
Right Connection (Part 3)

E

Data Relay Board (Photo)
↔ Panel

Common Connection Board (Photo)
↔ Common Relay Board

High Voltage Board (Photo)
↔ Common Relay Board (Photo)
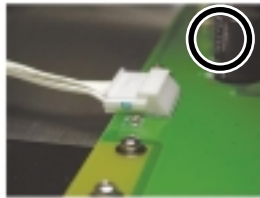
Locked

F

Unlocked
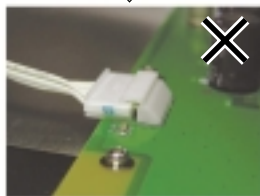
(4) Pixel Defect

Refer to the below for diagnosis.

Note: Typical Symptom are only shown. Another Symptom might appear.

> **Symptom:** Bright defect or dark defect
> **Cause/Countermeasure:** PDP failure if out of spec. ⇒ Exchange PDP.

1 pixel

2 pixels

2 pixels

3 pixels

3 pixels

3 pixels
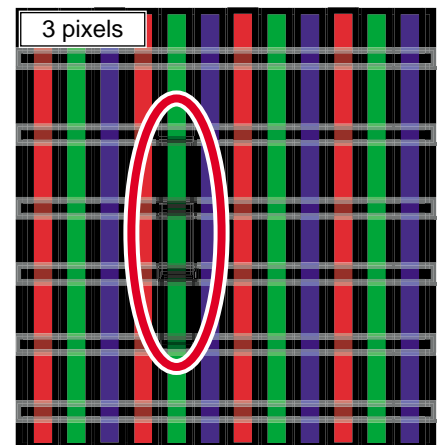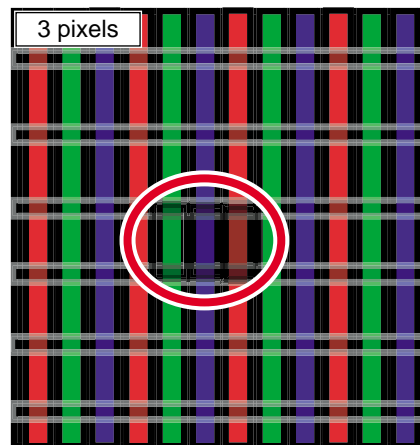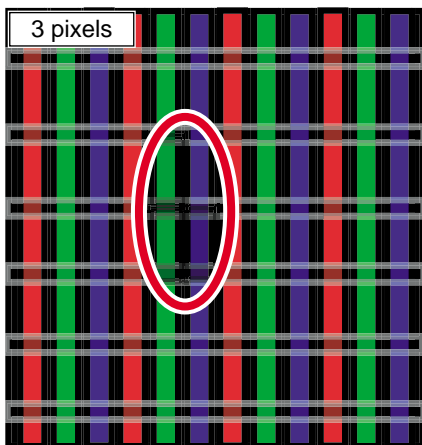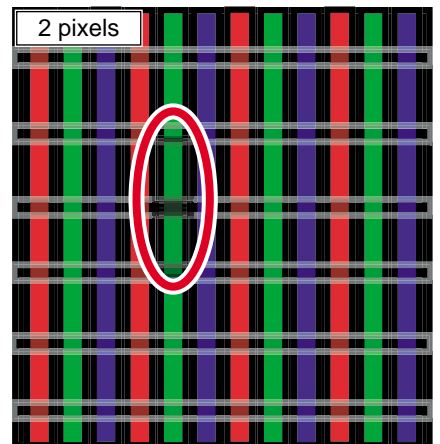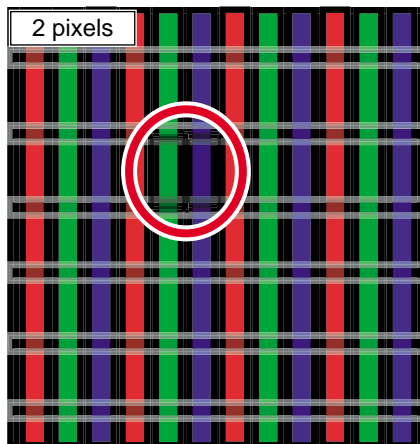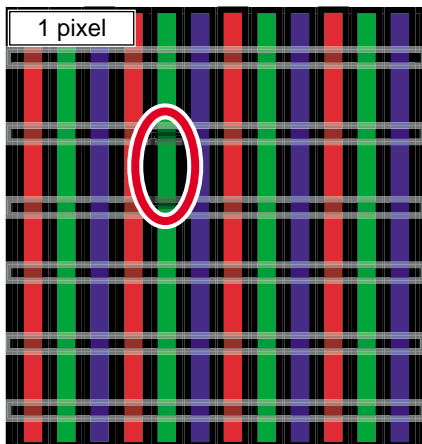
(5) Vertical Line

Note: Typical Symptom are only shown. Another Symptom might appear.

(5-1) **Symptom:** 1 vertical line (Open mode)

| All Red Pattern ⇒ Black 1 Line | All Green Pattern ⇒ Red 1 Line | All Blue Pattern ⇒ Red 1 Line | All Black Pattern ⇒ Normal |
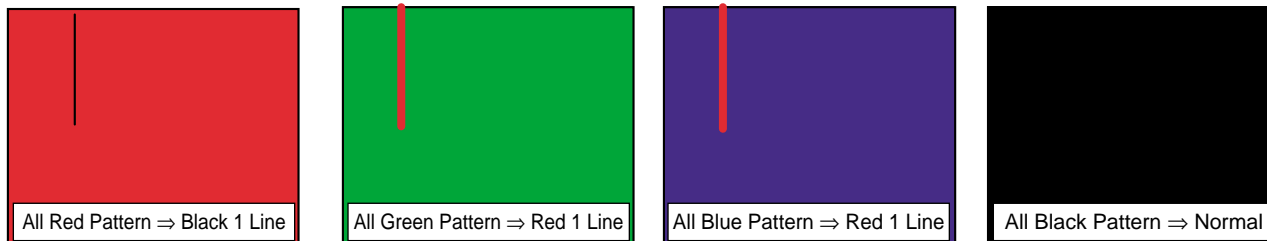
Red 1 Line Open Mode

Cause/Countermeasure:
① Open or contact failure of Data flexible cable ⇒ Clean, Reconnect or exchange connector.
② Failure in Data IC ⇒ Exchange PDP.
③ Failure in panel ⇒ Exchange PDP.

(5-2) **Symptom:** 2 vertical lines (Short mode)

| All Red Pattern ⇒ Blue 1 Line | All Green Pattern ⇒ Normal | All Blue Pattern ⇒ Red 1 Line | All Black Pattern ⇒ Normal |
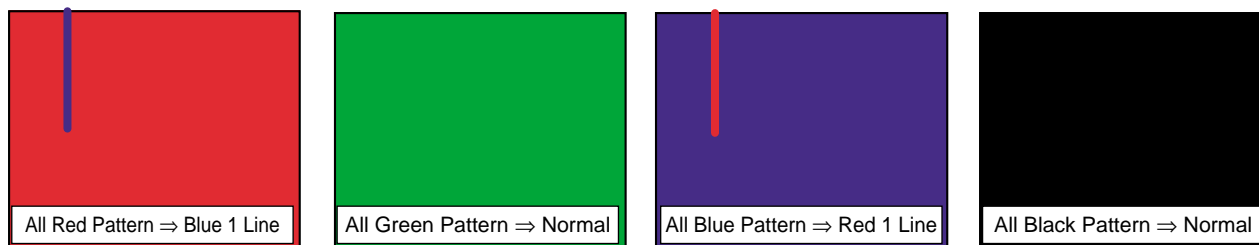
Shortage between Red and Blue

Cause/Countermeasure:
① Failure in Data IC ⇒ Exchange PDP.
② Failure in panel ⇒ Exchange PDP.

(5-3) **Symptom:** Vertical Line Block
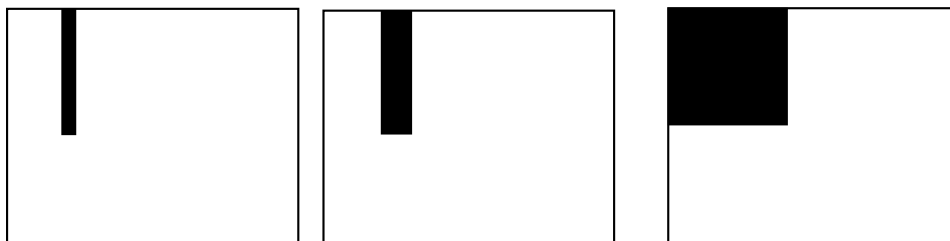
Cause/Countermeasure:
① Open or contact failure of Data flexible cable ⇒ Clean, Reconnect or exchange connector.
② Failure in Data IC ⇒ Exchange PDP.

Cause/Countermeasure:
① Open or contact failure of connector between Data Relay Board and Digital or High Voltage board ⇒ Clean, Reconnect or exchange connector.
② Open or contact failure of multiple Data flexible cable ⇒ Clean, Reconnect or exchange connector.
③ Failure in Data Relay Board ⇒ Exchange Data Relay Board.
④ Failure in multiple Data IC ⇒ Exchange PDP.

PDP-425MX

(6) Horizontal Line

Note: Typical symptom are only shown. Another symptom might appear.

Symptom: Horizontal lines

1 line	2 lines	Line block	Line block
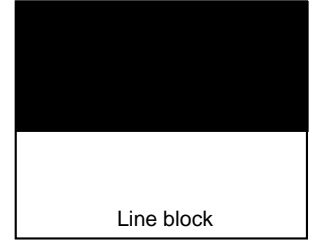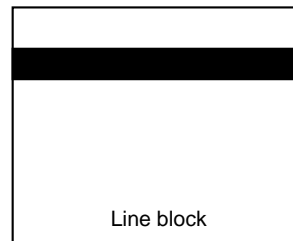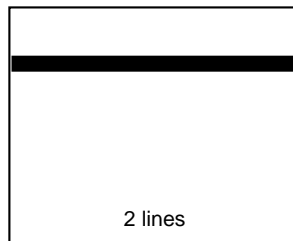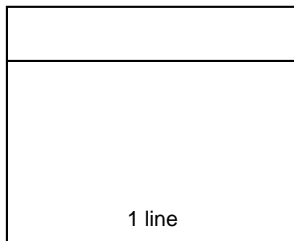
Cause/Countermeasure:
① Failure in Scan IC on Scan Relay Board ⇒ Exchange Scan Relay Board.
② Open or contact Failure of Scan Flexible Cable (CN01-CN04) at Scan Relay Board (U, D)
　 ⇒ Clean, Reconnect or exchange connector.
③ Contact failure of connector between Scan Board and Scan Relay Board ⇒ Clean, Reconnect or exchange connector.
④ Short between terminals of Scan IC due to screw dust ⇒ Clean around the terminals.

(7) Picture Defect

Note: Typical symptom are only shown. Another Symptom might appear.

(7-1) **Symptom:** No Picture (Priming flash).

High Voltage Board

Glass Fuse (F302)

OK: Short
NG: Open

Cause/Countermeasure:
① F302 open ⇒ Exchange High Voltage Board.

A

Data Relay Board (LU)   Data Relay Board (RU)

CN7708
CN7608
CN7709

Data Relay Board (RU)

CN7709

B

OK: Open
NG: Short
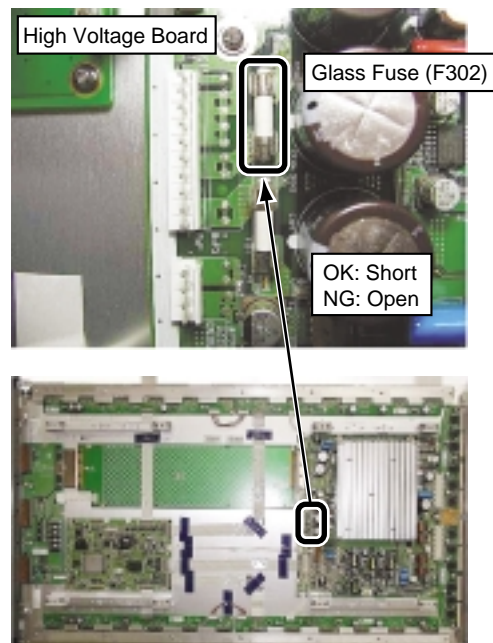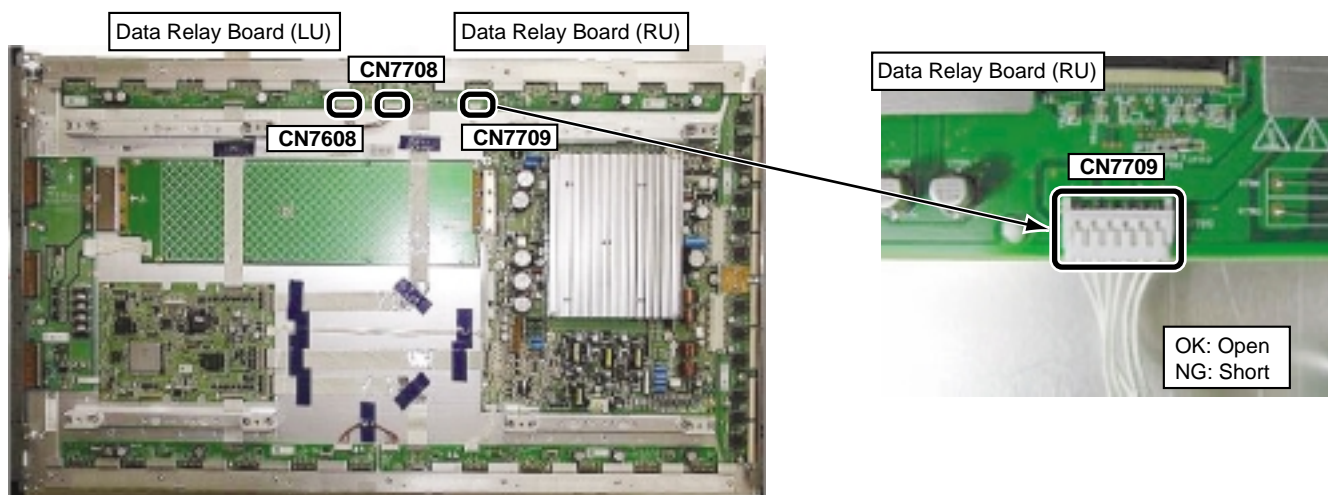
Cause/Countermeasure:

② If the connector CN7709 disconnected from Data Relay Board (RU) is short-circuited between Pin 1 (or 2) and GND
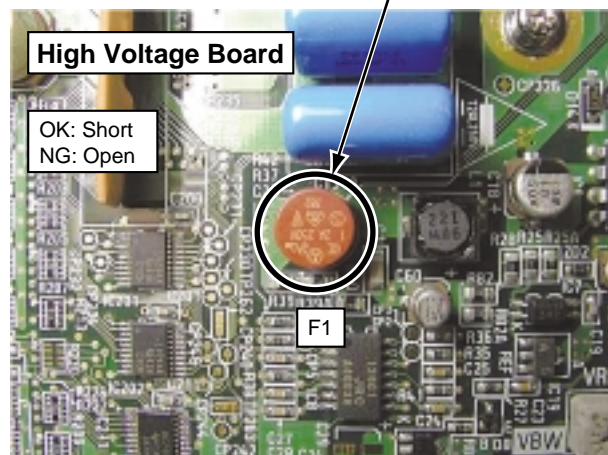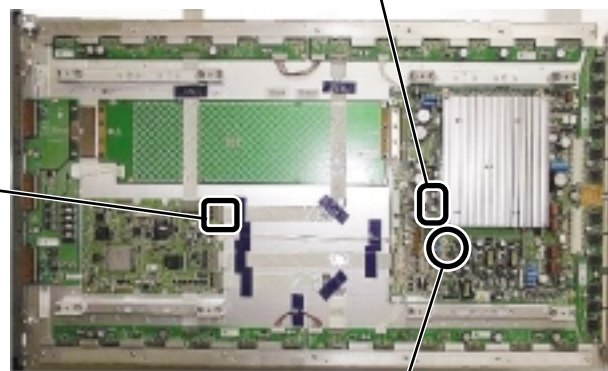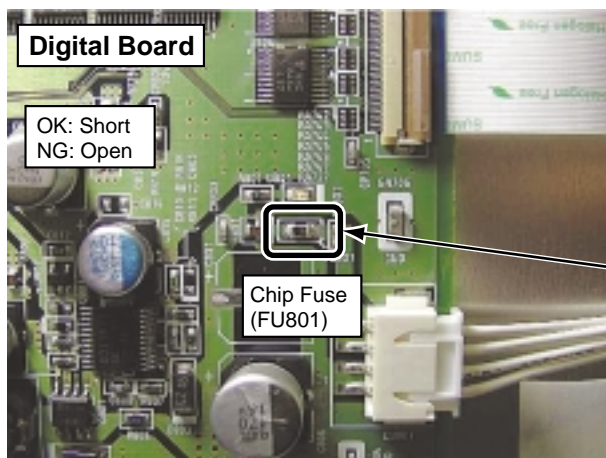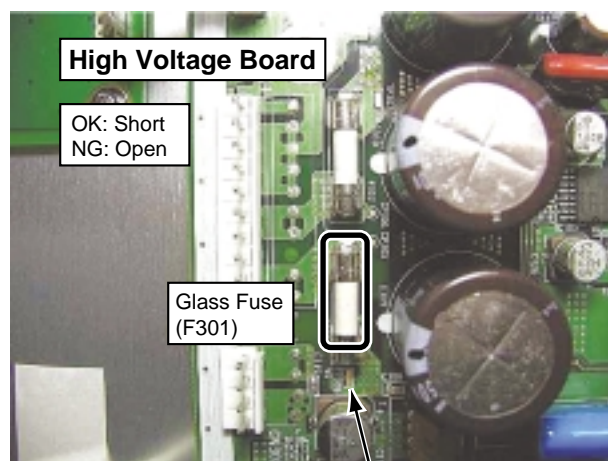(Pin 3 or 4) ⇒ Data IC is broken ⇒ Exchange PDP.

③ If the connector CN7709 disconnected from Data Relay Board (RU) is short-circuited between Pin 5 (or 6) and GND
(Pin 3 or 4) ⇒ Data Relay Board (LU) or (RU) is failed ⇒

  a) If the connector CN7608 disconnected from Data Relay Board (LU) is short-circuited between Pin 1 and GND

C

    (Pin 2 or 6) ⇒ Data Relay Board (LU) is failed ⇒ Exchange Data Relay Board (LU).

  b) If the connector CN7708 disconnected from Data Relay Board (RU) is short-circuited between Pin 1 and GND

    (Pin 2 or 6) ⇒ Data Relay Board (RU) is failed ⇒ Exchange Data Relay Board (RU).

D

Data Relay Board (RD)

CN7909

CN7808   CN7909

OK: Open
NG: Short

E

CN7908

Data Relay Board (LD)   Data Relay Board (RD)
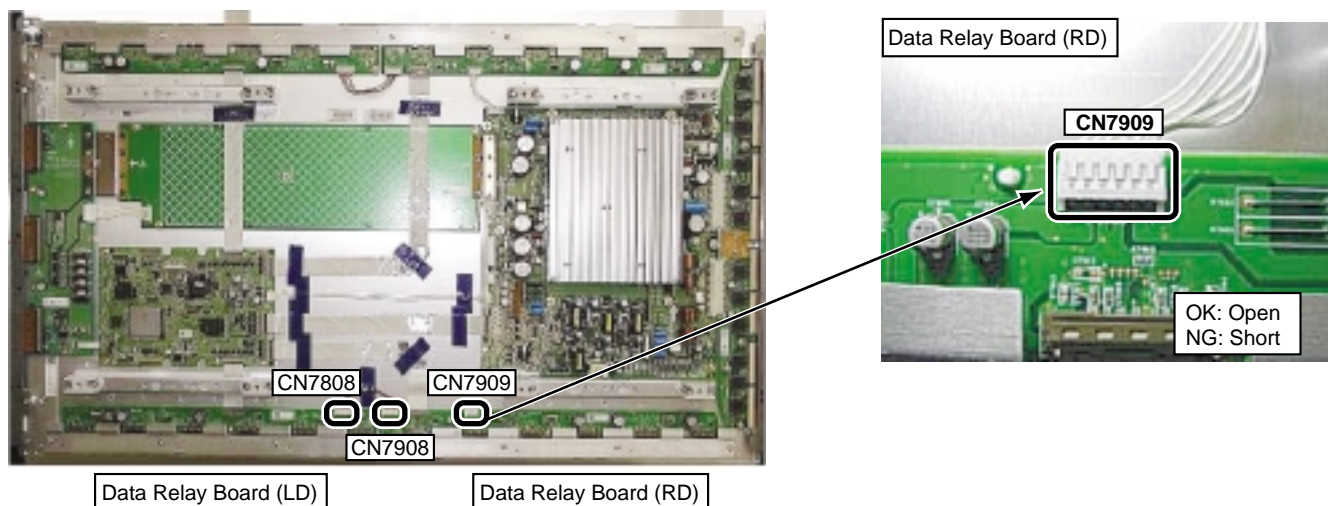
Cause/Countermeasure:

④ If the connector CN7909 disconnected from Data Relay Board (RD) is short-circuited between Pin 1 (or 2) and GND
(Pin 3 or 4) ⇒ Data IC is broken ⇒ Exchange PDP.

⑤ If the connector CN7909 disconnected from Data Relay Board (RD) is short-circuited between Pin 5 (or 6) and GND
(Pin 3 or 4) ⇒ Data Relay Board (LD) or (RD) is failed ⇒

  a) If the connector CN7808 disconnected from Data Relay Board (LD) is short-circuited between Pin 8 and GND

F

    (Pin 3 or 7) ⇒ Data Relay Board (LD) is failed ⇒ Exchange Data Relay Board (LD).

  b) If the connector CN7908 disconnected from Data Relay Board (RD) is short-circuited between Pin 8 and GND

    (Pin 3 or 7) ⇒ Data Relay Board (RD) is failed ⇒ Exchange Data Relay Board (RD).

(7-2) **Symptom:** No Picture. (Priming doesn't flash if W-X terminals are short-circuited.)

Cause/Countermeasure: No Diode characteristic ⇒ Exchange High Voltage Board.

High Voltage Board; Surface

PH2401F

High Voltage Board; Reverse

PH2401F

(112) **X**
(109) **W**
(107) **V**
(99 ~ 103) **T**
(93 ~ 96) **S**
(91) **R**
(86 ~ 89) **Q**
(81 ~ 84) **P**
(76 ~ 78) **O**
(71 ~ 74) **N**
(66 ~ 69) **M**
(61 ~ 64) **L**
(57 ~ 59) **K**

A (1 ~ 4)
B (6 ~ 9)
C (10 ~ 13)
D (15 ~ 18)
E (24)
F (33 ~ 35)
G (39 ~ 40)
H (49 ~ 50)
I (53)
J (55 ~ 56)

Check points

A - D	M - L
A - E	N - P
B - D	O - P
C - D	Q - R
E - R	R - S
F - N	R - T
G - M	S - T
H - I	T - V
I - J	W - X
K - L	

OK: Diode characteristic
NG: Other than above
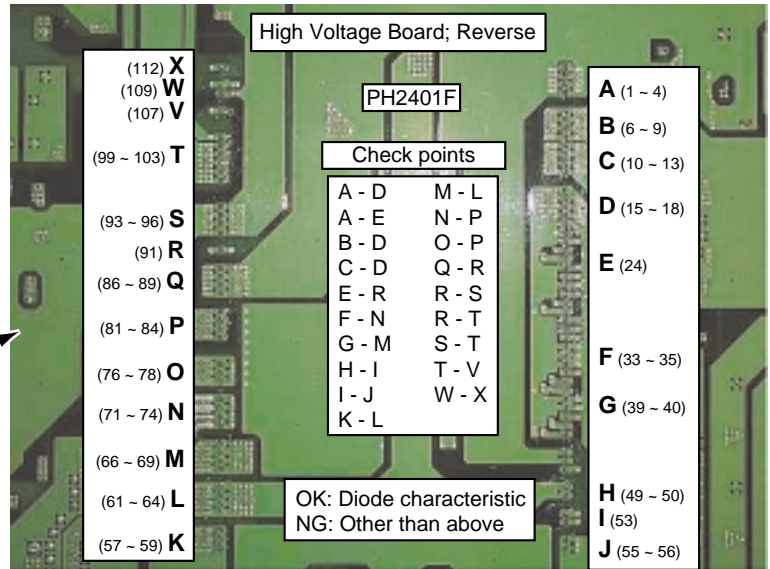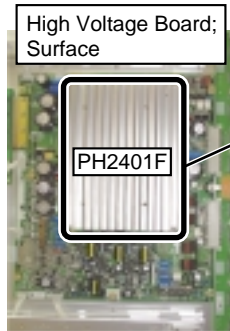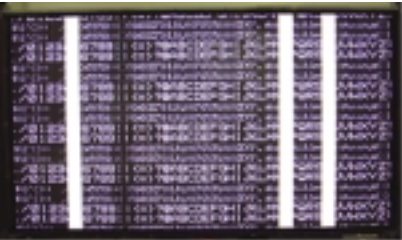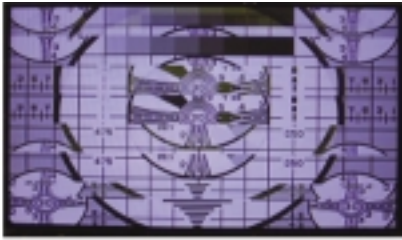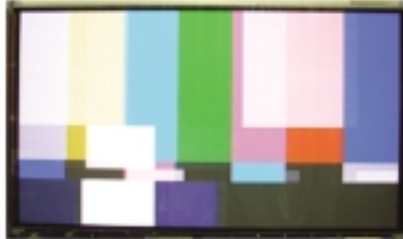
(7-3) **Symptom:** No Picture. (Priming doesn't flash.)

Cause/Countermeasure:
R146 open ⇒ Exchange High Voltage Board.

R146
OK: About 4.7Ω (2W)
NG: Open

R146
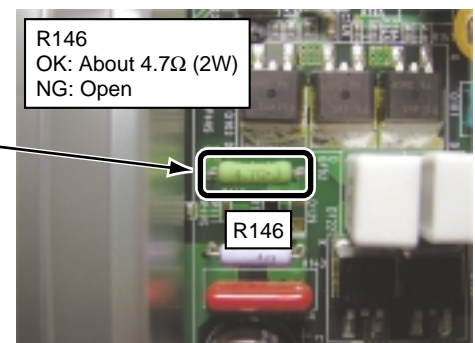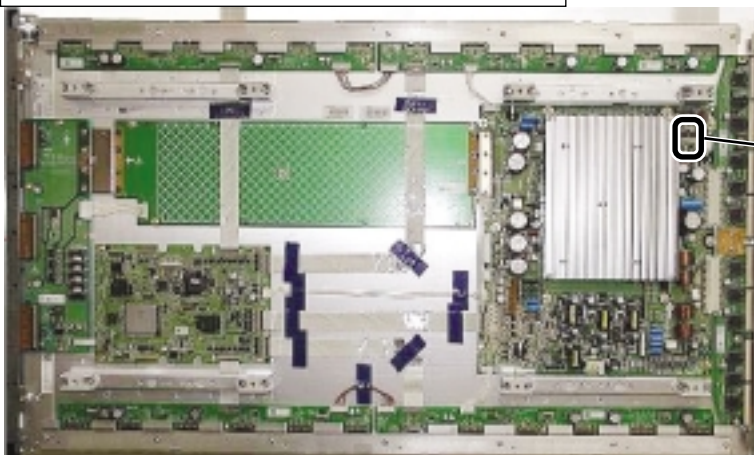
(7-4) **Symptom:** Abnormalities in a picture

One or more vertical bands, Multiple vertical lines	Transparent vertical band	Out of synchronization or duplication
Mosaic	Rectangular color shear, color discrepancy, shear in display	A number of lateral lines, Regular noise

Cause/Countermeasure:
① Contact failure of connector adjacent to Digital Board or short circuit due to conductive obstacle ⇒ Clean or Reconnect
② Failure in circuit on Digital Board ⇒ Failure in Digital Board

PDP-425MX

A

(8) Power off

Note: Typical Symptom are only shown. Another Symptom might appear.

(8-1) **Symptom:** No Picture (Priming doesn't flash) ⇒ Power off

B

Cause/Countermeasure:
① F301 open ⇒ Exchange High Voltage Board.
② FU801 open ⇒ Exchange Digital Board.
③ F1 open ⇒ Exchange High Voltage Board.

High Voltage Board

OK: Short
NG: Open

Glass Fuse
(F301)

C

Digital Board

OK: Short
NG: Open

Chip Fuse
(FU801)

D

High Voltage Board

OK: Short
NG: Open

F1

E

F

49

A

Cause/Countermeasure: If short-circuited, disconnect connector between High Voltage Board and Scan Relay Board and,
④ Short between NEGA-POSI on High Voltage Board ⇒ Exchange High Voltage Board.
⑤ Short between NEGA-POSI on Scan Relay Board (U) ⇒ Exchange Scan Relay Board (U).
⑥ Short between NEGA-POSI on Scan Relay Board (D) ⇒ Exchange Scan Relay Board (D).

B

High Voltage Board　　**Scan Relay Board (U)**

NEGA

POSI

Checkpoint
NEGA-POSI

C

OK: More than KΩ
NG: Short

D

High Voltage Board　　**Scan Relay Board (D)**

POSI

NEGA

Checkpoint
NEGA-POSI

E

OK: More than KΩ
NG: Short

F
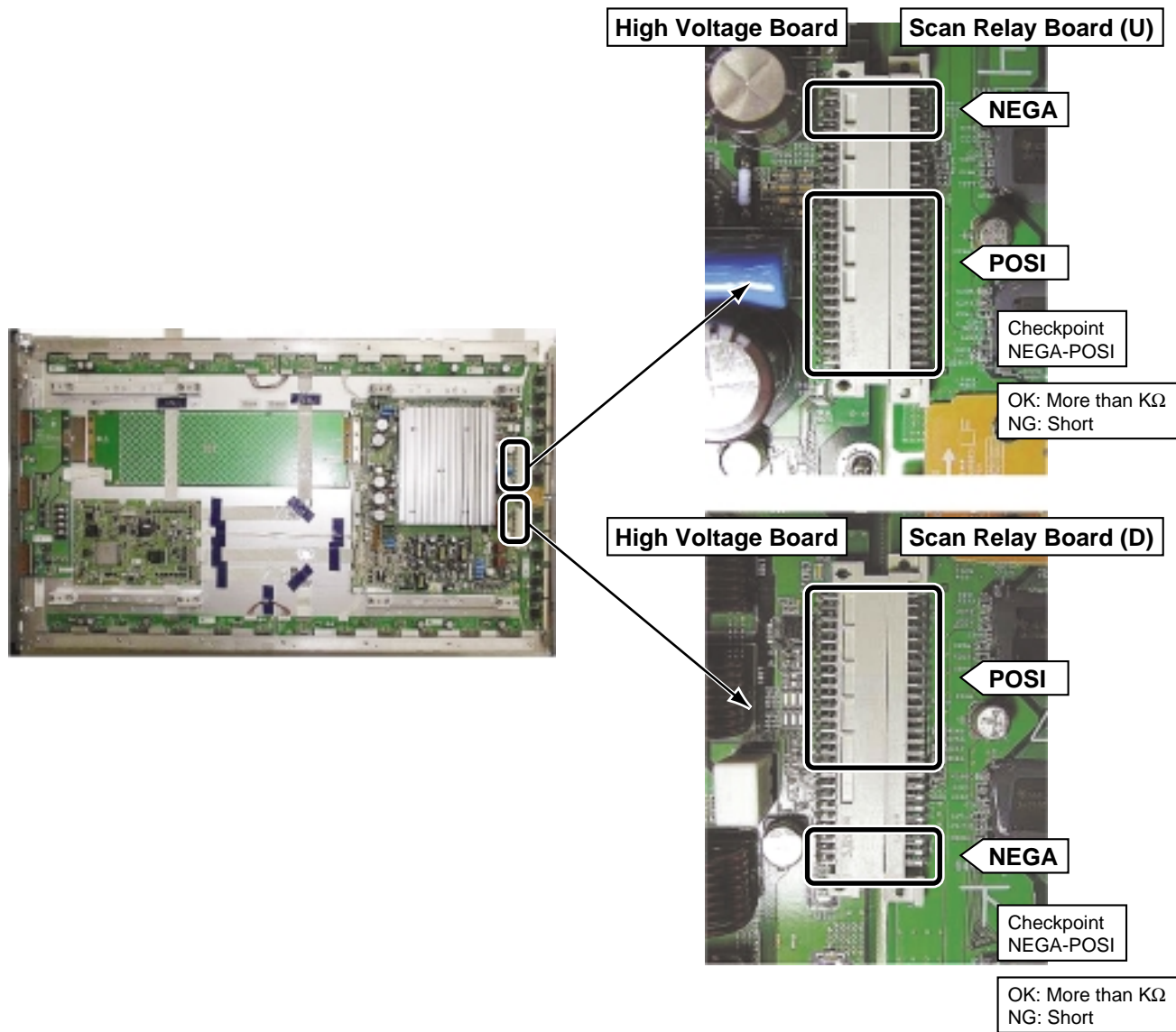
(8-2) **Symptom:** No Picture $\Rightarrow$ Power off (Priming flash)
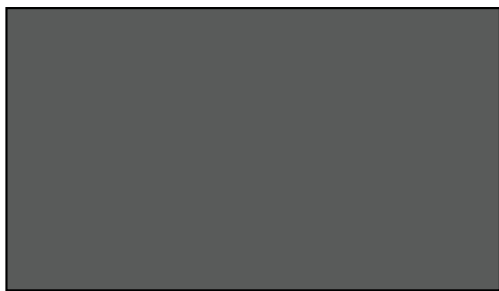
Cause/Countermeasure:
R91 open $\Rightarrow$ Exchange High Voltage Board.

High Voltage Board

Fuse Resistor
(R91)

R91
OK: About 2.2Ω (1W)
NG: Open
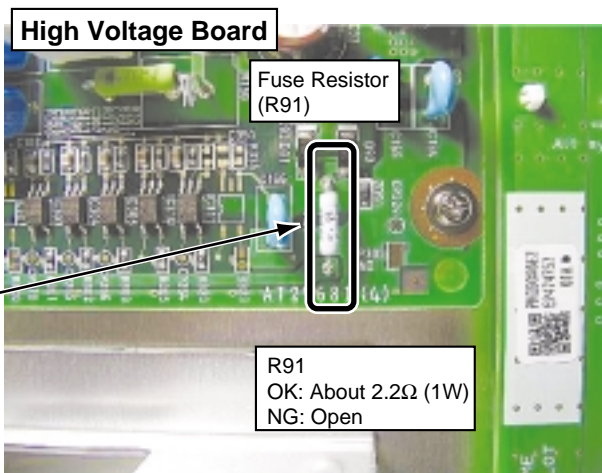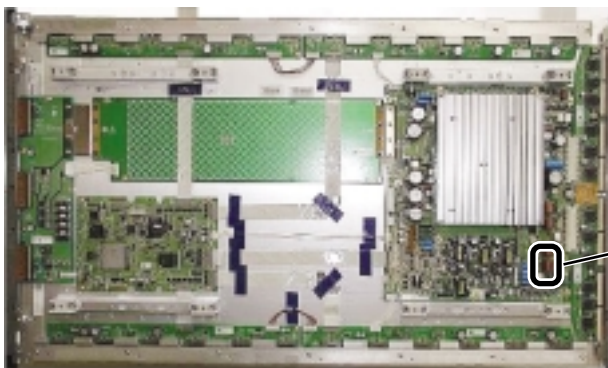
(8-3) **Symptom:** Failure in Writing ⇒ Power off
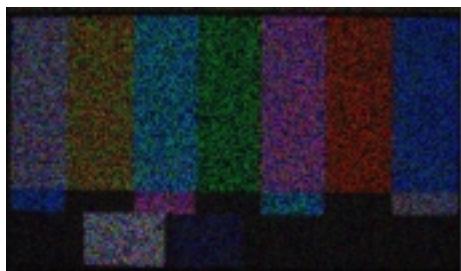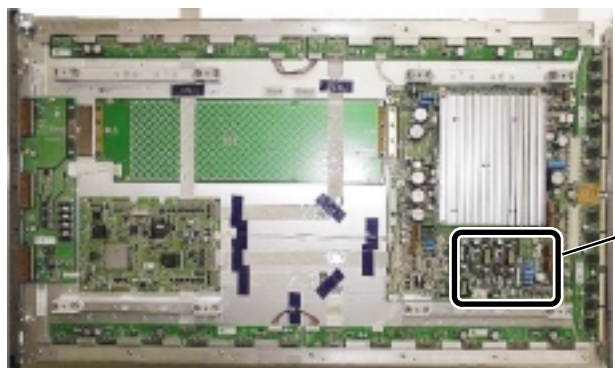

Dark and rough picture
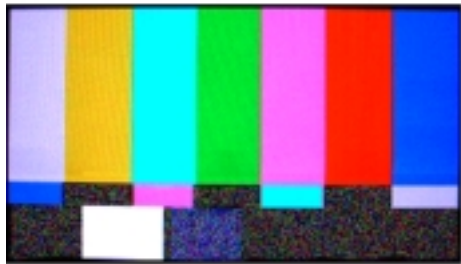
Many light spots on dark portion

Cause/Countermeasure:
R43, R61 open ⇒ Exchange High Voltage Board.

(8-4) **Symptom:** White Pattern even in no signal ⇒ Power off
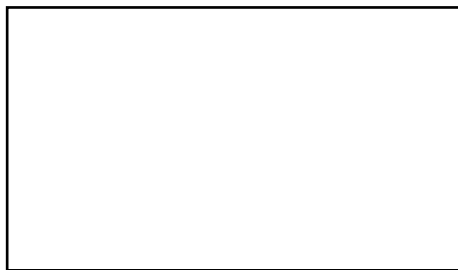
Cause/Countermeasure:
R150 open ⇒ Exchange High Voltage Board.

Fuse Resistor (R43), (R61)

Fuse Resistor (R150)
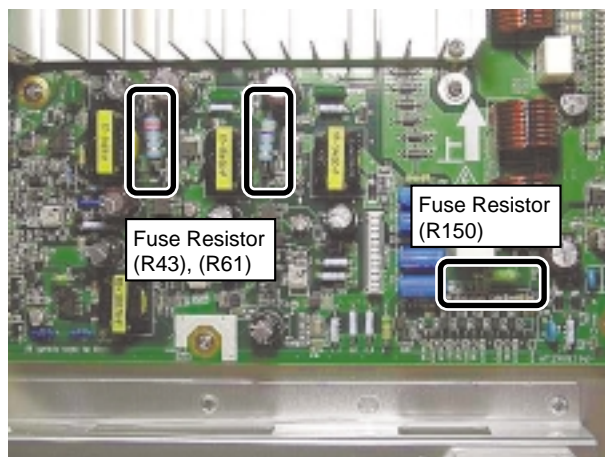
R43	OK : About 3.3Ω (2W)	
	NG : Open	
R61	OK : About 4.7Ω (2W)	
	NG : Open	
R150	OK : About 4.7Ω (2W)	
	NG : Open	

A

2. DISASSEMBLY

Follow the procedure below for diagnosis.

Procedure


```
┌─────────────────────────┐
│     Prepare tools.      │
└─────────────────────────┘
            ⬇
┌─────────────────────────┐
│    Prepare product.     │
└─────────────────────────┘
```
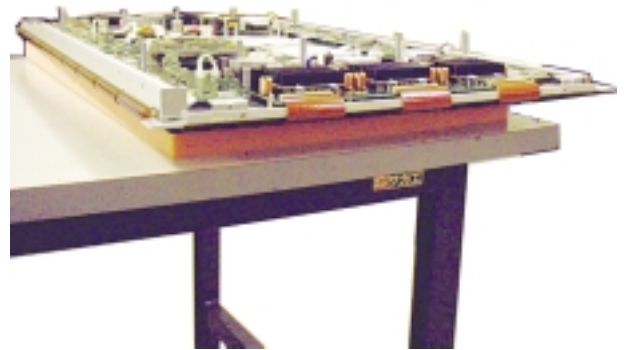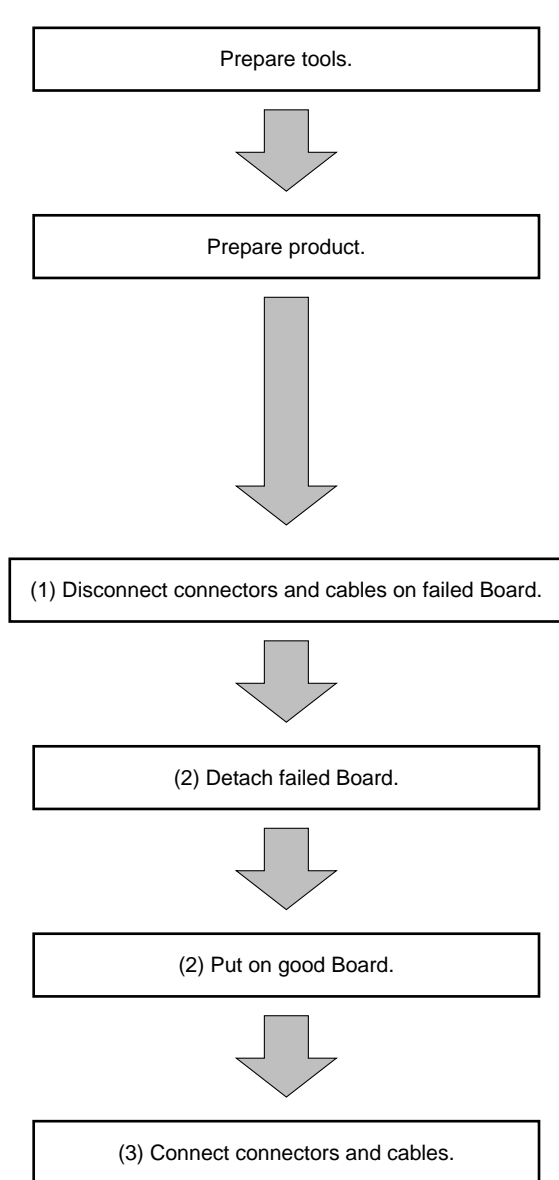
Caution:
Put cushion under failed PDP to cover general surface of glass before laying it's screen down.

```
            ⬇
┌──────────────────────────────────────────────┐
│ (1) Disconnect connectors and cables on       │
│     failed Board.                             │
└──────────────────────────────────────────────┘
            ⬇
┌─────────────────────────┐
│  (2) Detach failed Board. │
└─────────────────────────┘
            ⬇
┌─────────────────────────┐
│   (2) Put on good Board.  │
└─────────────────────────┘
            ⬇
┌─────────────────────────┐
│ (3) Connect connectors and cables. │
└─────────────────────────┘
```

B

C

D

E

F

A

(1) Detach connectors and cables on failed Board.

Caution: Be careful of handling cables and connectors to avoid failure. Be sure to take off Heat Sink before detach Data Relay Board. See next Page for the procedure.

| Data Relay Board (LU) 8 connectors | Data Relay Board (RU) 9 connectors |

Common Connection Board 5 connectors

Common Relay Board 1 connector

Digital Board 7 connectors

High Voltage Board 6 connectors

Scan Relay Board (U) 5 connectors

Scan Relay Board (D) 5 connectors

| Data Relay Board (LD) 8 connectors | Data Relay Board (RD) 9 connectors |
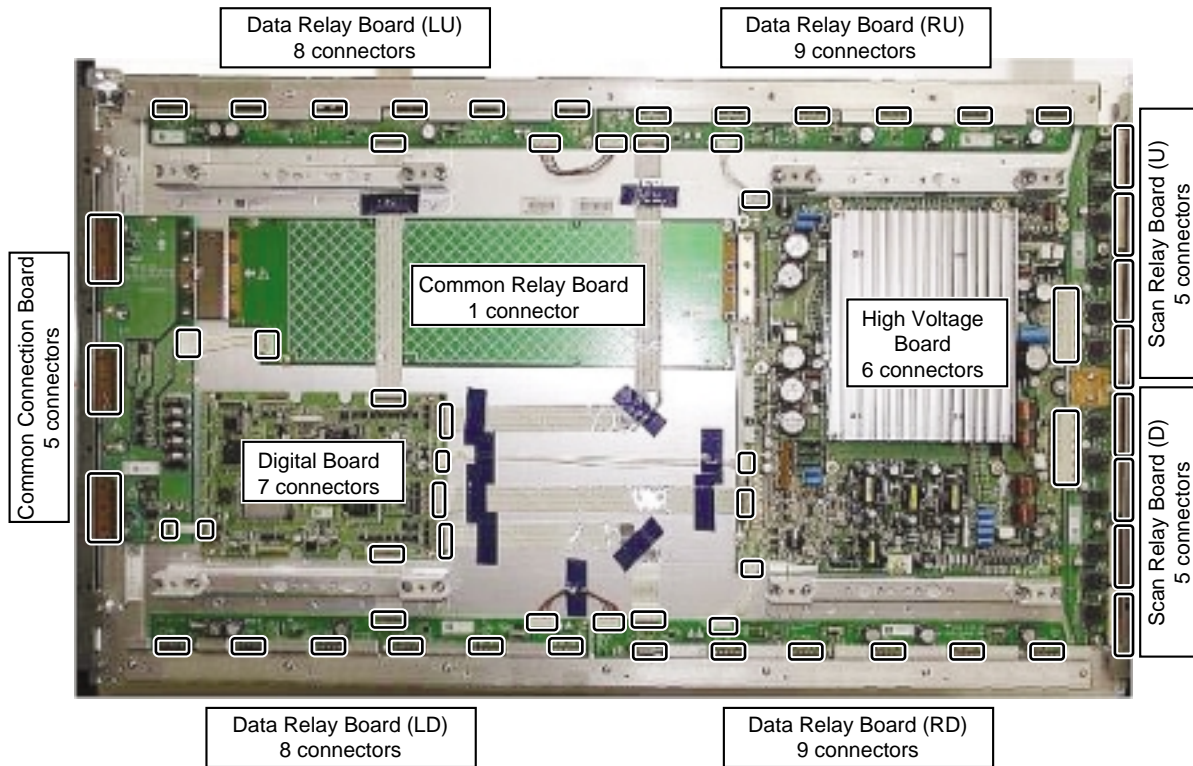
(2) Loosen screws of failed Board and put on good Board.

Caution: Be careful not to leave screwdriver, screw or screw dust. Be sure to take off Heat Sink before detach Data Relay Board. See the next page for the procedure.

| Data Relay Board (LU) 3 screws | Data Relay Board (RU) 3 screws |

Common Connection Board 9 screws

Common Relay Board 15 screws

Digital Board 4 screws

High Voltage Board 15 screws

Scan Relay Board (U) 2 screws

Scan Relay Connection Board 2 screws

Scan Relay Board (D) 2 screws

| Data Relay Board (LD) 3 screws | Data Relay Board (RD) 3 screws |

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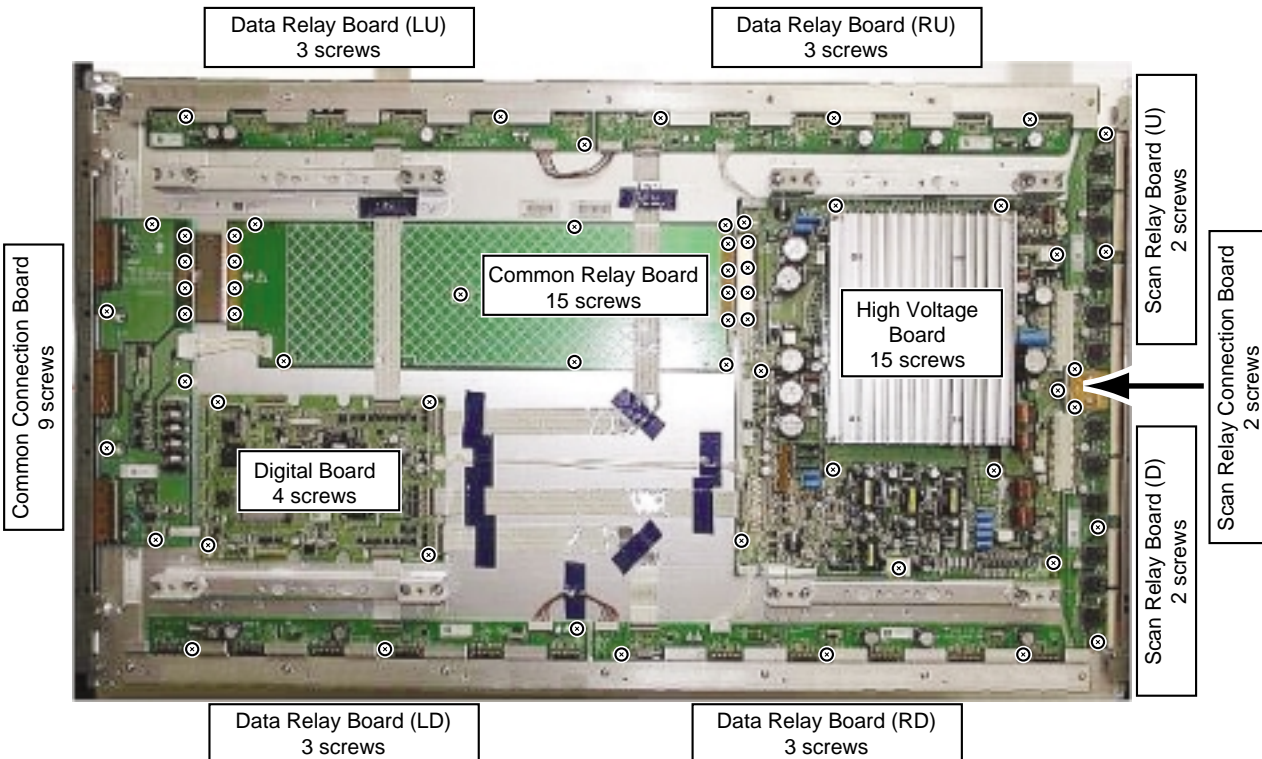
● **How to detach Heat Sink**

> **Caution:** Stress on detaching easily breaks flex cable because Data TCP is sticking with Heat Sink (heat-conductive silicone sheet). (See Photo ④)
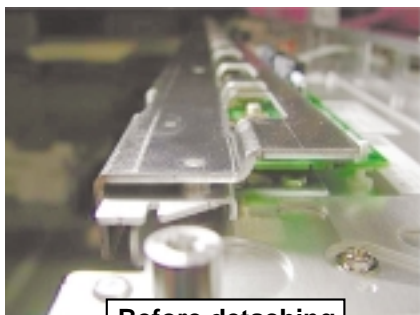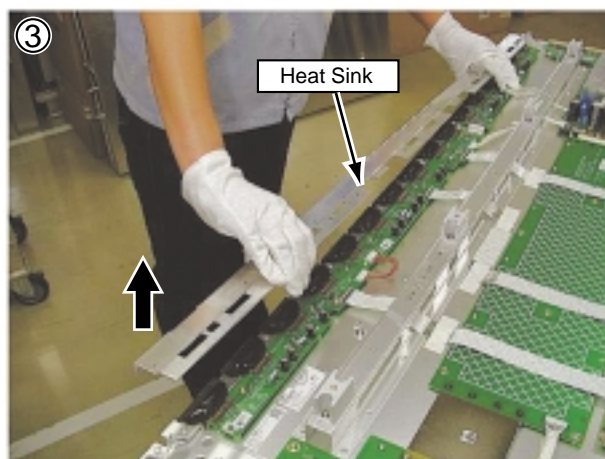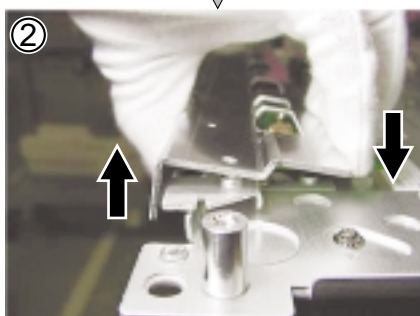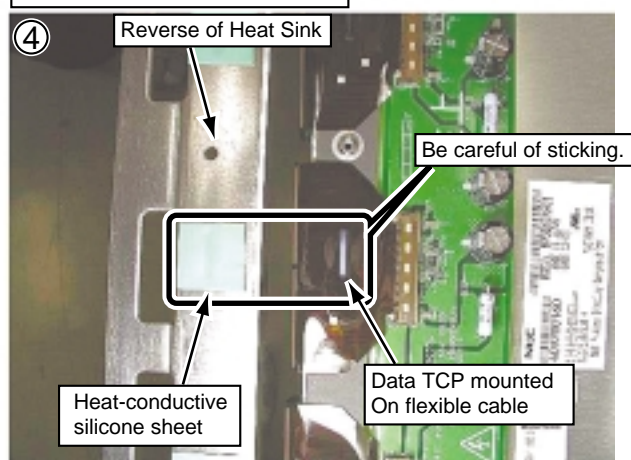
Before detaching

1. Slowly swing Heat Sink back and forth. (①, ②)
2. Gently lift Heat Sink up from Data TCP. (①, ②)
3. Repeat ① and ② until Heat Sink is taken off. (③)

①

Repeat

②

③ Heat Sink

Heat Sink and Data TCP

④ Reverse of Heat Sink

Be careful of sticking.

Heat-conductive silicone sheet

Data TCP mounted On flexible cable
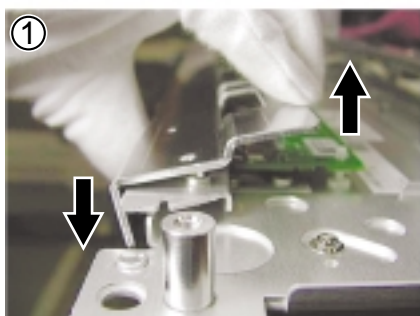
(3) Put on connectors and cables of good Board.

Caution: Be sure to put on Heat Sink after assembling Data Relay Board.

Data Relay Board (LU)
8 connectors

Data Relay Board (RU)
9 connectors

Common Connection Board
5 connectors

Common Relay Board
1 connector

Digital Board
7 connectors

High Voltage
Board
6 connectors

Scan Relay Board (U)
5 connectors

Scan Relay Board (D)
5 connectors

Data Relay Board (LD)
8 connectors

Data Relay Board (RD)
9 connectors
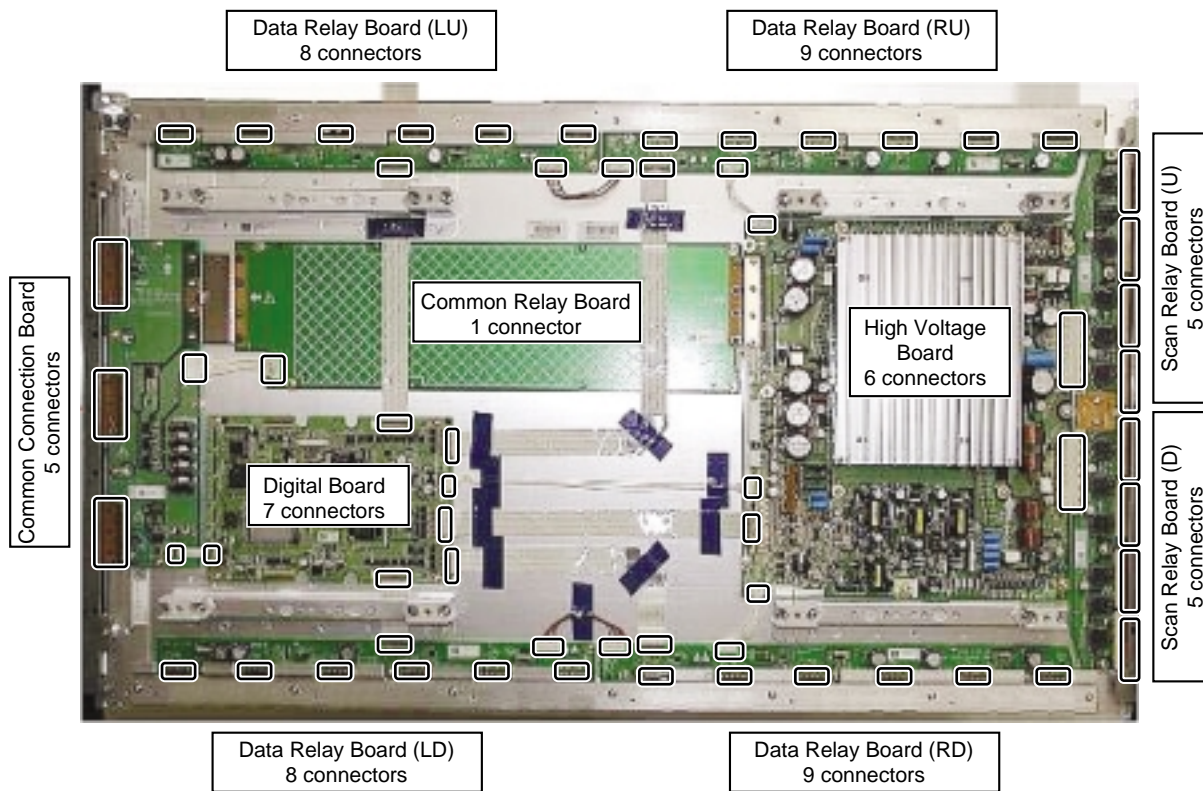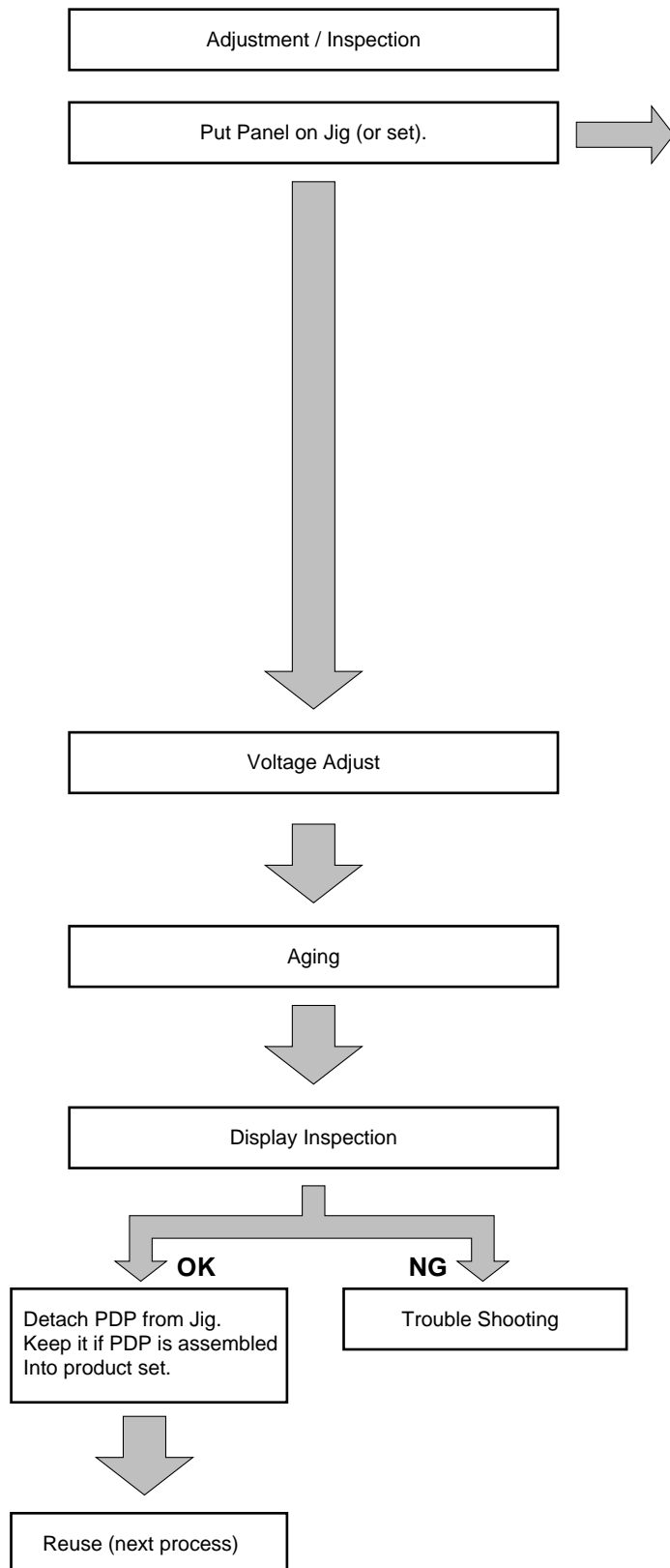
3. ADJUSTMENT

Example of mounting to jig

Adjustment / Inspection

Put Panel on Jig (or set).

Voltage Adjust

Aging

Display Inspection

Caution:
Be sure to connect a Signal Cable and two Power Cables.
Otherwise High Voltage Board may be broken.

OK **NG**

Detach PDP from Jig.
Keep it if PDP is assembled
Into product set.

Trouble Shooting

Reuse (next process)

(1) Condition of Adjustment

Follow the procedure below.
(1-1) Conduct "(3) Adjustment of Vsw1 & Vsw2" and "(4) Adjustment of Vbw & Vp", when High Voltage Board is replaced.
(1-2) There is no need of adjustment if Board other than High Voltage Board.

(2) Voltage Label Check

Be sure to confirm voltages on Voltage label before conducting adjustment.

Example	
Vbw : 115.2	**Vbw Vsw1 Vp Vsw2**
Vsw1 : 220.2	(s190.0 / d70.0) 115.2 /220.2 /249.8 /210.1
Vp : 249.8	********************************
Vsw2 : 210.1	408200943
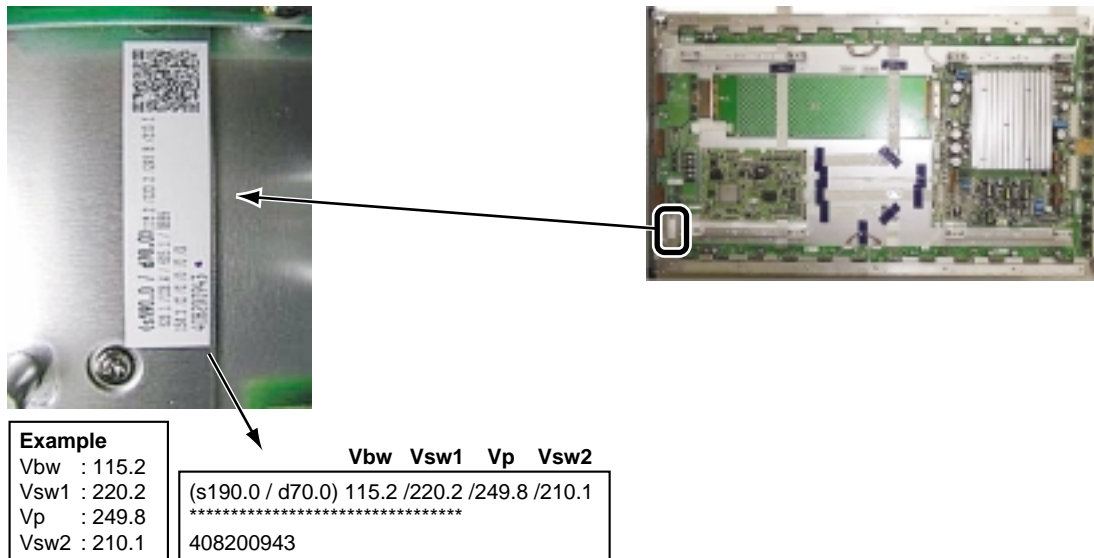
(3) Adjustment of Vsw1 & Vsw2

Caution: Use the nearest chassis for grounding.

Vsw1: Adjust VR3 so that the voltage between Test Pad (TP328) and GND becomes "Rated Voltage on Label ± 0.5V".

Vsw2: Adjust VR4 so that the voltage between Test Pad (TP310) and GND becomes "Rated Voltage on Label ± 0.5V".
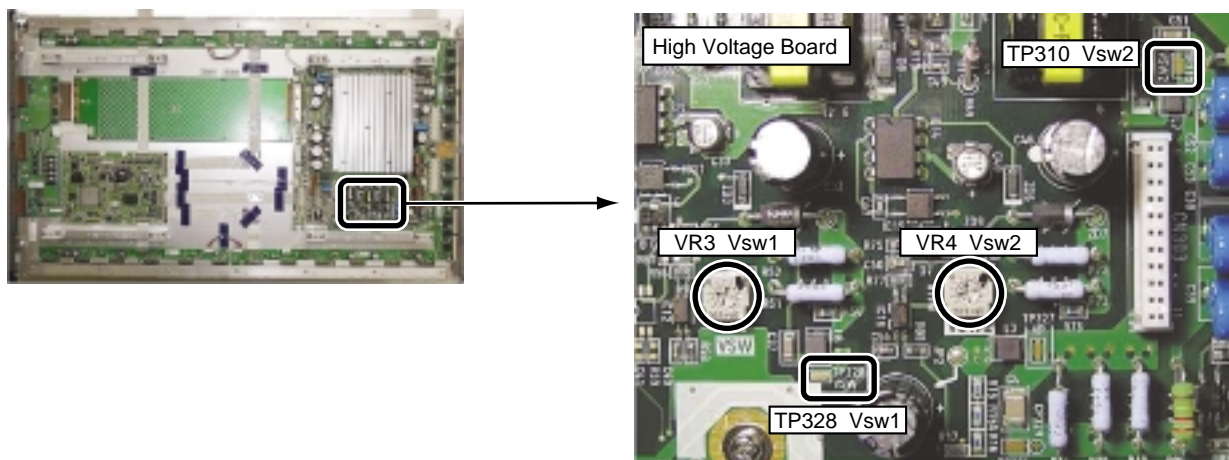
(4) Adjustment of Vbw & Vp

Caution: Use the nearest chassis for grounding.

Vp: Adjust VR1 so that the voltage between Test Pad (TP327) and GND becomes "Rated Voltage on Label ± 0.5V" .

Vbw: Adjust VR2 so that the voltage between Test Pad (TP329) and GND becomes "Rated Voltage on Label ± 0.5V".

High Voltage Board

VR2 Vbw

VR1 Vp

TP329 Vbw

TP327 Vp
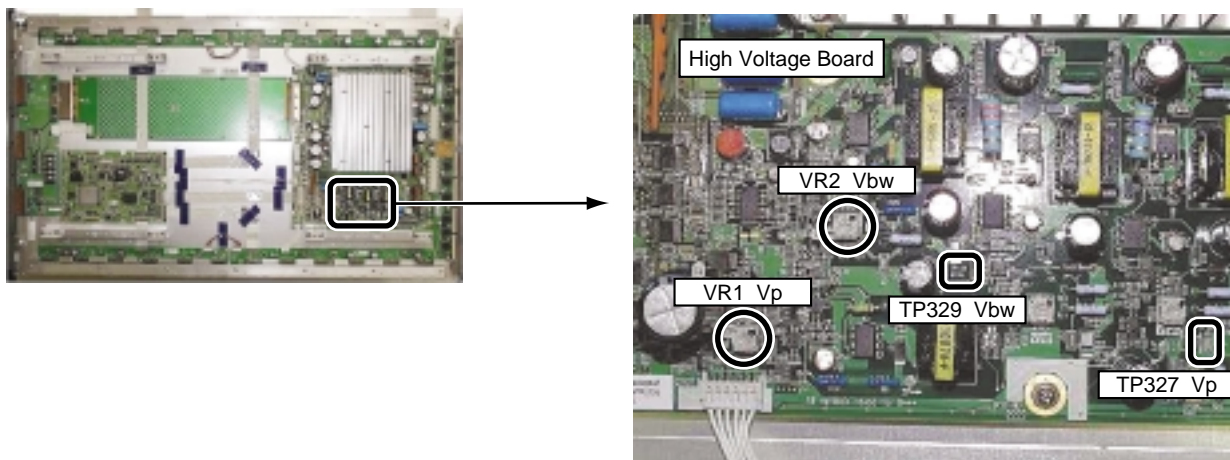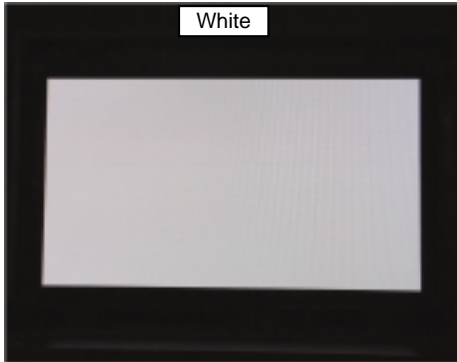
(5) Aging

White

Conduct aging with White Pattern as shown left for at least 30 minutes.

Caution:
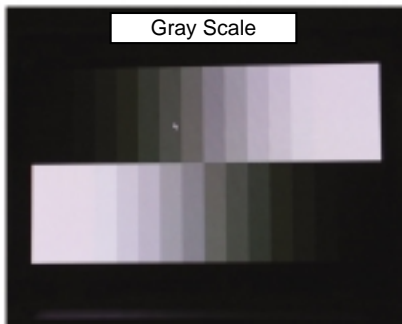Do not use a fixed pattern such as window or cross hatch for aging.

(6) Display Inspection

Confirm that every signal picture is good.
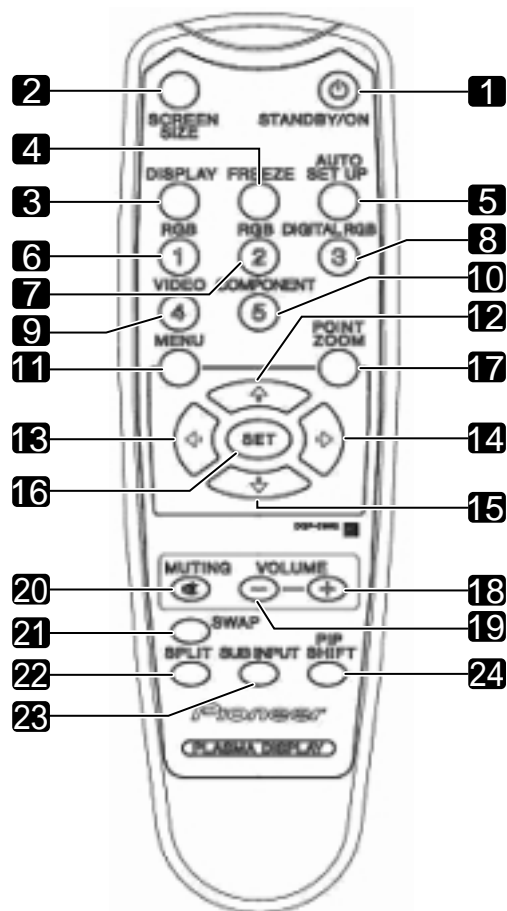

Red

Green

Blue

Color Bars

Gray Scale
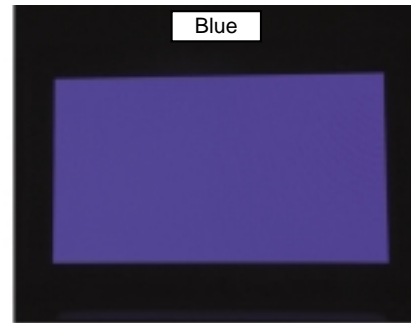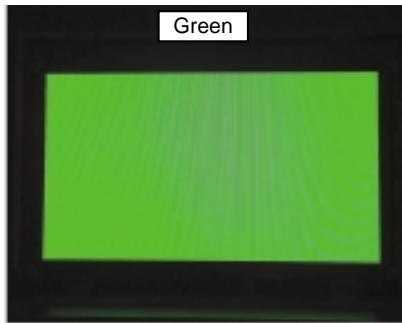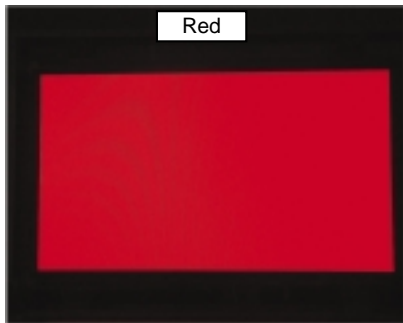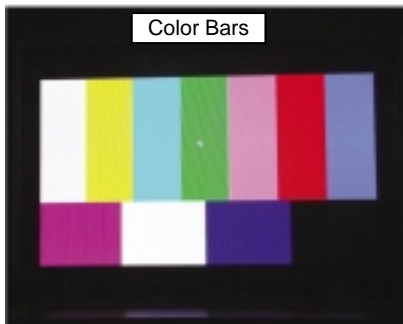
Caution:
PDP module may have instable picture display if electrified after a long storage.
Then conduct aging for about 2 hours.

PDP-425MX

8. PANEL FACILITIES

■ **Remote Control Unit**

9 **INPUT 4 (VIDEO)**
Direct access of input 4 (CVBS, S-Video) source
10 **INPUT 5 (COMPONENT)**
Direct access of input 5 (YUV) source
11 **MENU**
Displays the menus screen / Leave the menus screen
12 **UP ARROW**
Navigate up in the OSM.
13 **LEFT ARROW**
Navigate left in the OSM.
14 **RIGHT ARROW**
Navigate right in the OSM.
15 **DOWN ARROW**
Navigate down in the OSM.
16 **SET**
Accept the selected item in the OSM.
Change the setting value of selected item which don't
has the sub menu.
Return to the previous menu if current display menu is
last sub menu.
17 **POINT ZOOM**
Press this button to select the 1.5, 2.0 and 2.5 ratio of
zoom.
18 **VOLUME +**
Adjusts the audio volume up
19 **VOLUME -**
Adjusts the audio volume down
20 **MUTING**
Mutes or restores the sound volume
21 **SWAP**
In SPLIT mode press this button to swap the input
picture.
22 **SPLIT**
Press this button to enter dual picture mode.
PIP / PBP / POP
23 **SUB INPUT**
In SPLIT mode Press this button to Selected dual
picture second input.
24 **PIP SHIFT**
In SPLIT mode press this button to change the second
input at four corner position to alternate.

1 **STANDBY/ON**
Switches the power on / Standby
2 **SCREEN SIZE**
Automatically detects the signal and sets the aspect
ratio, in the order as shown in the below:
4:3 / FULL / WIDE / ZOOM / 2.35:1 / Dot by Dot
3 **DISPLAY**
Displays the source setting and screen size message on
the screen / Disable displays
4 **FREEZE**
Freezes a frame from a moving image / Press again to
cancel the function.
5 **AUTO SET UP**
Press this button to adjust Phase, Position and Clock
automatically.
6 **INPUT 1 (RGB)**
Direct access of input 1 (RGB) source
7 **INPUT 2 (RGB)**
Direct access of input 2 (RGB) source
8 **INPUT 3 (DIGITAL-RGB)**
Direct access of input 3 (DVI-D) source

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